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ABSTRACT

The major topics of the 1976 seminar in Nairobi were: (1) the present state of postgraduate training in agricultural economics at African universities (primarily in anglophone countries); (2) objectives for postgraduate training in agricultural economics; (3) academic aspects of training programs (teaching, course planning, research, and field work); (4) administrative and financial questions (regulations, costs, cooperation among universities and with supporting agencies); and (5) recommendations to departments, university administrators; African university and faculty associations, agricultural economics societies, and supporting agencies. A bibliography of case studies and working papers, and the conference program are included. (Editor/MSE)

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# REPORT

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# POSTGRADUATE TRAINING IN AGRICULTURAL ECONOMICS AT AFRICAN UNIVERSITIES

Breeding and husbandry methods for quality improvement. Post-harvest physiology of crops. Quality standards. Conditions for transportation and storage. Crop and produce protection.

AM 4. *Animal Production*

Production of animals for market demand. Breeding and husbandry methods for quality improvement. The use of animal products in processing industri d livestock products.

AM 5. *Ma*

Analytical tools of marketing decision-making. Review of marketing concepts and Collecting market information. Market data analysis. Motivation, advertising and product research. Forecasting model building. Marketing in Kenya. Channels of distribution. Advertising. Marketing success control. The marketing of services. Role of exchanges. Marketing of primary produce. Marketing applied to government.

AM 6. *Marketing Promotion*

Case study analysis: product quality design; advertising tools and campaigns; sales promotion methods. Promotion agencies. Promotion costs and returns.

AM 7. *Market laws and Regulations*

National and international laws and regulations governing the markets of agricultur of marketing activities.

AM 8.

Price ed markets. Space and transfer costs. roduction. Efficient organisation within with alternative product forms.

AM 9.

Intern l marketing channels of importance to operating in agricultural markets world

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## SEMINAR IN NAIROBI 1976

## 2

African Seminar

# POSTGRADUATE TRAINING IN AGRICULTURAL ECONOMICS

Nairobi, Kenya, 22 July - 4 August, 1976

Report

by

Prof. Dr. H.U. Thimm

Justus-Liebig-Universität, Giessen

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## I. FOREWORD

There are many ways and means for improving agricultural training, and certainly not the least important one is to offer to those involved in this task, opportunities to meet, to exchange information and experience, to discuss common problems and to draw conclusions and recommendations for their future work. Since this is one of the major activities of the German Foundation for International Development (DSE), we decided to follow a proposal to sponsor and organise an "African Seminar on Postgraduate Training in Agricultural Economics".

The Seminar was conceived to take place at the same time when the XVI Conference of the International Association of Agricultural Economists (IAAE) was held in Nairobi. Thus, a coordination with the IAAE Conference programme and an interchange of participants to both events was made possible. Whereas the IAAE Conference had chosen the topic of "Decision Making and Agriculture", the Seminar tried to

- take stock of postgraduate programmes in Agricultural Economics presently offered by African universities,
- analyse required job qualifications for agricultural economists in Africa,
- develop guidelines for setting educational objectives, defining course contents and planning course programmes in postgraduate training, and
- give advice to departments, governments and donor agencies for improving their cooperation in this field.

Admittedly and naturally, the Seminar did not reach completely all its aims. One of the main shortcomings was that - with a few exceptions - only departments from anglophone African countries could be invited. Another difficulty revealed itself in the discussions on course objectives and course content: Models of postgraduate training programmes differ widely from each other, due to the varying national demands, the different educational patterns, the human and capital resources available, the impact of expatriate staff, etc. It was, however, not the idea of this Seminar to make a plea for African uniformity in postgraduate agricultural training. The Seminar tried, instead, to contribute to solving common problems according to the requirements in the various departments: How far the Seminar succeeded in this may be judged from this report.

It is our hope that the ideas and experiences, views and recommendations laid down in this report may find wide circulation and that all Faculties of Agriculture in Africa, regardless whether they have or have not yet established postgraduate programmes in Agricultural Economics, may profit from this.

We wish to express our gratitude to all those who assisted us in planning and organising the Seminar, above all to Prof. Th. Dams and Dr. T.T. Hartmann of the IAAE, to Prof. R.B. Contant of the Association of Faculties of Agriculture in Africa, to Mr. H. Meyer-Rühen and to Prof. H.U. Thimm (University of Giessen) who had, in addition to his leading function in the venture, the difficult task of editing this report.

| | |
|---|---|
| Dr. Gerhard Fritz | Hartmut Glimm |
| Director General | Head, Higher Education Section |

## II. SUMMARY AND RECOMMENDATIONS

## II. SUMMARY and RECOMMENDATIONS

### AFRICAN SEMINAR ON POSTGRADUATE TRAINING IN AGRICULTURAL ECONOMICS, Nairobi 1976

### A. Present state of postgraduate training in agricultural economics at African universities

1. The majority of Faculties of Agriculture has opened the opportunity to start postgraduate training in agricultural economics wherever conditions allow. But the Departments of Agricultural Economics are not always equipped to make full use of this opportunity.

2. The restrictions to a faster development of postgraduate training in agricultural economics lie mainly in lack of suitable staff and facilities, missing financial support for scholarships and research, and partly in the unavailability of qualified candidates.

3. In West Africa, the University of IBADAN has taken the lead in establishing a postgraduate training programme with course work and research thesis, leading to M.Sc. and Ph.D. degrees in agricultural economics.

4. In East Africa, one major programme has been established at the University of NAIROBI, leading to an M.Sc. (agriculture) in specialised fields of agricultural economics, e.g. extension and agricultural marketing. From July 1977 it is expected to become an M.Sc. (agric. economics) programme with special options in Agricultural Development, Food Industry Economics, Agricultural Marketing, and Farm Management.

5. Other West and East African Universities have started limited programmes catering for a small number of students as a consequence of their restricted resources.

## 6. Objectives for postgraduate training in agricultural economics

1. Postgraduate training in agricultural economics in Africa serves a dual purpose:

   a. to provide advanced training in a local environment for competent participation in rural development as educators, researchers, administrators, managers, farmers, politicians, etc.

   b. to enable the universities to become fully equipped institutions of higher learning and research, attracting through this very development, highly qualified staff and students.

2. Postgraduate training has to meet the demand of the future employers of graduates and the intellectual interest of students and teachers. Such training must be oriented to the creation of problem solving attitudes and deep concern for the welfare of the rural population.

3. The interest of society may vary through time and from country to country. A regular review of objectives is therefore essential, to meet changing needs of the society.

4. Before new programmes are commenced the determination of detailed educational and other objectives is a prerequisite for successful implementation.

### RECOMMENDATIONS TO DEPARTMENTS

a. Objectives should be reviewed regulary by public and private employers of graduates and the university staff responsible. No programme should be conducted without a competent advisory body of employers and representatives from the private and public sector of the food and agricultural economy.

b. Objectives of postgraduate training programmes and course outlines should be circulated to all appropriate African university departments for appraisal and comments.

c. The need for drawing up a synopsis of post-graduate courses in agricultural economics in African universities is recognized.

## C. Academic aspects of postgraduate training programmes in agricultural economics

### I. Teaching and coursework

1. Teaching aims and course content were analysed in considerable detail. Divergence existed in what was considered to be essential or desirable.
2. Practical experience and fieldwork were noted as an important part of the learning process.
3. Lack of necessary service courses from other departments is common.
4. The quality of courses can be improved through the development of methods for assessing the skill and effectiveness of university teachers.
5. The disruptive effects of short term contracts in teaching and research is also recognised.

RECOMMENDATIONS TO AFAA

a. A checklist of essential and desirable courses and course contents should be worked out through an AFAA organised workshop for all different fields of agricultural economics, using existing African programmes as basic material. AFAA should approach donors to establish a special fund in the region of US $ 30,000 to finance a first round of discussions.

b. AFAA may provide the necessary platform and organisational structure to allow a continuous discussion of all aspects of postgraduate training in agricultural economics through regular subject meetings and a survey of relevant data to meet identified needs.

### II. Research and fieldwork

1. Postgraduate research projects should usually be designed to contribute to problem solving policies in each country.
2. Fieldwork is a necessary component of research and scholarships should include funds to cover additional costs which fall on students, staff members and departments.

3. Research opportunities are prerequisites for attracting highly qualified and motivated university staff.
4. Research results have to be disseminated speedily in order to be useful to society. Departments should be provided with the necessary resources to enable them to do this.

RECOMMENDATIONS TO DEPARTMENTS

a. Research projects for postgraduate students have to be selected in close cooperation with the staff, students and the local agricultural administration.

b. The Departments of Agricultural Economics may introduce a system for the exchange of unpublished research data (e.g. departmental discussion papers) and only locally available information for the use in postgraduate teaching and research.

## D. Administrative aspects of postgraduate training programmes

### I. Administration and regulations

1. Postgraduate training programmes have to be planned with the full participation of teaching staff, university administrators and financing sponsors. Numerous problems such as: admission, administration, lecturing facilities, library development, staff availability and research resources must be solved efficiently and timely by different people, operating along different policy lines and constraints.
2. Postgraduate training programmes have to be implemented at a high level of administrative performance because of the valuable staff and student time involved, the expensive resources used and the expectations raised through theses programmes. Regulations are necessary to provide the organisational background to programmes, and they must be adjusted to changing conditions.

## RECOMMENDATIONS TO UNIVERSITY ADMINISTRATORS

a. Departments of Agricultural Economics are urged to secure comprehensive administrative support in planning and implementing postgraduate training programmes.

b. Inter-University Committees should conduct research into means of improving staff development programmes. A fund of US $ 25,000 may prove to be sufficient to identify major essentials for optimal staff development at African universities.

c. University administrators must be persuaded to minimise administrative problems and thus allow full concentration of staff and students on their academic programme.

d. Universities should seriously consider the early establishment of "graduate schools" where all postgraduate training activities and the administration of various programmes of all faculties and departments are concentrated.

## II. Sponsoring and financing

1. Most postgraduate programmes in agricultural economics at African Universities suffer a number of serious organisational shortcomings and financial restrictions.
2. Financial sources from national governments and foreign donor agencies are often controlled by policies which do not necessarily fit the needs and intentions of the departments organising postgraduate programmes.
3. Little effective coordination can presently be observed between universities and donors, and donors among themselves to find optimal solutions to organisational and financial problems.
4. Postgraduate programmes are very complex undertakings where simultaneous financing of facilities, staff and supporting services as well as students scholarships play a crucial role for the final success.

## RECOMMENDATIONS TO UNIVERSITIES AND DONORS

a. Universities are urged to institutionalise the cooperation with overseas universities and donor agencies (partnership programmes) whenever postgraduate training needs outside support.

b. Donor agencies or consortia of donors should consider the funding of whole programmes (staff, services, field work, scholarships, housing (if necessary), etc.) in contrast to financing scholarships only, to overcome all restricting factors.

c. Donors supporting postgraduate programmes are urged to pay special attention to the role of staff development and research projects for the final success of programmes from the standpoints of the graduate, the institution and the society at large.

d. Donor agencies may introduce, wherever justified, "programme financing" to allow the universities to administer the funds and the selection of candidates for scholarships in their own responsibility.

## E. Inter-African cooperation

1. The role and capacity of existing African university and faculty associations like AAU, AFAA, Inter-University Commitees or the Agricultural Economics Societies have not been adequately recognized.
2. The cooperation between Faculties of Agriculture and Departments of Agricultural Economics to pool resources in Africa has not yet reached a state where potential benefits can be realised.
3. The exchange of ideas, materials, staff and students between Departments of Agricultural Economics encounters many difficulties due to lack of interest, information, finances and manpower resources.

4. It is necessary to start the improvement of teaching skills by facilitating the sending of junior university teachers to short training courses already offered in Africa. A sum of US $ 30,000 annually may be sufficient for the programme.

5. The Eastern and Western Africa Agricultural Economics Societies continue to provide a valuable forum for conferences and seminars, and publish high-quality journals. These Societies thus act as valuable vehicles for raising the standards of teaching and research in agricultural economics and merit substantial support from all persons and institutions concerned.

## RECOMMENDATIONS TO AAU, AFAA, UNIVERSITIES AND DONORS

a. AAU should look for stronger local representation at each member university to strengthen interest and capacity for international cooperation. AAU should give staff and student exchange for post-graduate programmes high priority in its activities.

b. AFAA's role in providing an organisational structure for common activities of all African Faculties of Agriculture must be used fully and more efficiently. AFAA needs funds to operate a secretariat and for organising surveys, workshops and seminars to promote this Inter-African exchange especially to pool resources for postgraduate training purposes. Donors are requested to assist AFAA in this task.

c. AAU, AFAA and IU-Commitees should provide the organisational structure for negotiation with international agencies and foundations to help in the establishment of regional programmes for postgraduate studies in Africa which may be distributed throughout the continent to cater for needs of specialised training as well as changing national objectives.

d. Donors should also support with special funds the professional societies of agricultural economists which try to strengthen the training and performance of agricultural economists through their activities.

## III. Present state of post-graduate training in agricultural economics at African universities

Plenary Session Thursday, July 22, 1976

Chairman: Mr. M. OKAI

1.0 Since the establishment of postgraduate programmes at African universities is a most recent development, the number of such programmes is still small. Nevertheless the majority of Faculties of Agriculture and the respective University Senates have taken steps to pass regulations allowing postgraduate studies wherever staff, facilities, scholarships and students are available. In the field of agricultural economics the situation can be summarised as follows:

a. West Africa is leading with a major programme at IBADAN, and smaller programmes at ILE-IFE, KUMASI, LEGON and AHMADU BELLO.

b. Eastern Africa has one major programme at NAIROBI, and smaller programmes at MAKERERE, MOROGORO and KHARTOUM.

c. During the academic year 1975/76 the number of postgraduate students enrolled in the different programmes of agricultural economics, the structure of the preceding undergraduate training, and the existing staff can be obtained from a survey done by Dr. G. LORENZL (NAIROBI) as seen in the following tables 1 - 4.

d. Information about the specific circumstances of the Departments to conduct postgraduate training programmes is given through reports by the Heads of Departments as presented to the seminar. They can be used as background material for the assessment of the potential of the Departments to start or to expand postgraduate training in the future.

Table 1: Number of students undergoing ag econ training, 1975/76

| Year | B.Sc. 1 | 2 | 3 | 4 | Σ | M.Sc. 1 | 2 | 3 | Ph.D. |
|---|---|---|---|---|---|---|---|---|---|
| **Ghana** | | | | | | | | | |
| Kumasi | 49 | 49 | 38 | 45<br>(8) | 181 | 1 | - | 2 | - |
| Legon | 57 | 32 | 26 | - | 115 | 2 | 2 | - | - |
| **Kenya** | | | | | | | | | |
| Nairobi | 73 | 62 | 54 | - | | 10 | 10 | - | - |
| **Malawi** | | | | | | | | | |
| Lilongwe | 25 | 25 | 25 | - | 75 | - | - | - | - |
| **Nigeria** | | | | | | | | | |
| A-Bello | 78 | 49 | 50 | - | 177 | - | 2 | - | - |
| Ibadan | 150 | 150 | 150 | - | 450 | 24 | 8 | - | 10 |
| Ile-Ife | 60 | 60 | 60 | - | 180 | 1 | 1 | - | 1 |
| Nsukka | (19) | (22) | (19) | - | | - | - | - | - |
| **Sudan** | | | | | | | | | |
| Khartoum | 213 | 221 | 205 | (34) | about 850 | - | 3 | 3 | 1 |
| **Tanzania** | | | | | | | | | |
| Morogoro | 79 | 89 | 84 | - | 252 | 4 | 5 | - | 4 |
| **Uganda** | | | | | | | | | |
| Kampala | 74 | 86 | 78 | - | 238 | - | 12 | - | 2 |
| **Zambia** | | | | | | | | | |
| Lusaka | 29 | 30 | 24 | - | about 100 | - | - | - | - |

( ) Ag. Econ. Option

Table 2: Structure of undergraduate training, 1975/76

| | B.Sc. Programme | | | Agric Economics [a] | |
|---|---|---|---|---|---|
| | Years | Teaching weeks | Total Contact hours | Contact hours | % of total contact hours |
| Ghana | | | | | |
| Kumasi | 4 | 108 | 3240 | 630 | 19 |
| Legon | 3 | 102 | 2220 | 288<br>(552) | 12<br>(25) |
| Kenya | | | | | |
| Nairobi | 3 | 90 | 2450 | 420 | 17 |
| Malawi | | | | | |
| Lilongwe | 4 | 120 | 3300 | 625 | 19 |
| Nigeria | | | | | |
| A- Bello | 3 | | 2020 | 228<br>(464) | 11<br>(23) |
| Ibadan | 3 | 90 | 2300 | 450 | 20 |
| Ile-Ife | 3 | 81 | 2160 | 460 | 21 |
| Nsukka | 4 | 140 | 3500 | 620 | 18 |
| Sudan | | | | | |
| Khartoum | 4 | 104 | 2800 | 260<br>(364) | 9<br>(13) |
| Tanzania | | | | | |
| Morogoro | 3 | 90 | 1850 | 550 | 29 |
| Uganda | | | | | |
| Kampala | 3 | 90 | 2000 | 500 | 25 |
| Zambia | | | | | |
| Lusaka | 4 | 90 | 2700 | 540 | 20 |

( ) Ag. Econ. option

[a] excluding quantitative methods

Table 3: Structure of M.Sc. taught programmes, 1975/76

| | Econ. Theory | Quant. Meth. | Farm Manag. P.Econ. | Marke-ting | Agr. Policy | Sociol. + Ex-tension | Rural Develop. Planning | Research Method | Oth-ers | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Ghana | | | | | | | | | | |
| Kumasi | 60 | 75 | 75 | 75 | - | - | 75 | - | | 360 |
| Legon | 80 | 135 | 54 | 54 | 54 | - | 54 | 54 | | 485 |
| Kenya | | | | | | | | | | |
| Nairobi | 40 | 100 | - | 220 | (30) | - | - | 40 | (30) | 430 |
| Malawi | | | | | | | | | | |
| Lilongwe | | | | | | | | | | - |
| Nigeria | | | | | | | | | | |
| A- Bello | | | | | | | | | | - |
| Ibadan | 75 | 80 | (60) | (30) | (30) | (60) | (30) | 30 | 55 | 300 |
| Ile-Ife | 90 | 45 | 45 | 45 | 45 | | 45 | 45 | | 360 |
| Nsukka | | | | | | | | | | - |
| Sudan | | | | | | | | | | |
| Khartoum | | | | | | | | | | - |
| Tanzania | | | | | | | | | | |
| Morogoro | 40 | 80 | 80 | 40 | - | 80 | 40 | 40 | | 400 |
| Uganda | | | | | | | | | | |
| Kampala | 40 | 80 | 80 | 20 | - | - | - | - | | 220 |
| Zambia | | | | | | | | | | |
| Lusaka | | | | | | | | | | - |

( ) Optional

Table 4: Teaching staff and teaching load, 1975/76

| | Prof.+ Assoc. Prof. | Senior Lectur. | Lectur. | Assist. Lectur. | Total Acadamic | Average Teaching Load[a] |
|---|---|---|---|---|---|---|
| **Ghana** | | | | | | |
| Kumasi | - | 1/1 | 3/3 | 3/0 | 7 | 141 |
| Legon | 1/1 | 2/2 | 1/1 | 3/2 | 7 | 148 |
| **Kenya** | | | | | | |
| Nairobi | 1/1 | 2/2 | 4/2 | - | 7 | 121 |
| **Malawi** | | | | | | |
| Lilongwe | | | | | | |
| **Nigeria** | | | | | | |
| A- Bello | 1/1 | 3/2 | 3/0 | | 7 | 66 |
| Ibadan | 5/5 | 6/6 | 6/6 | - | 17/17 | 62 |
| Ile-Ife | 1/1 | 2/2 | 6/5 | 1/0 | 10/8 | 82 |
| Nsukka | - | 2/2 | 3/3 | 1/0 | 6/5 | 103 |
| **Sudan** | | | | | | |
| Khartoum | - | 3/3 | 1/1 | - | 4(3) | 91 |
| **Tanzania** | | | | | | |
| Morogoro | 2/2 | 2/2 | 3/0 | 2/0 | 9/4 | 106 |
| **Uganda** | | | | | | |
| Kampala | 1/1 | - | 5/? | - | 6/? | ? |
| **Zambia** | | | | | | |
| Lusaka | - | 1/1 | 2/? | - | 3/? | 180 |

[a] Contact-hours per staff member per annum, without regarding service courses for and from other departments, without supervision of M.Sc. students during their research period (estimated at 150 hours per student).

## 2.0. Departmental reports:

All reports summarised in this chapter are based on written and oral presentation to the seminar. To save space they concentrate on the post-graduate training situation and touch undergraduate teaching aspects, the major concern of all departments, only in those cases where explanations are needed to understand the chances or restrictions for post-graduates studies. Unfortuately not all ag economics departments of African Faculties of Agriculture could attend the seminar. Because of lack of information those departments are not included in this section.

## 2.1 University of Khartoum, Sudan A. M. EL HADARI

At the undergraduate level, the Department of Rural Economy offers a number of courses. After covering the prescribed undergraduate courses it is hoped that the student will have developed a flavour for agricultural economics. However, he will not yet have specialised in agricultural economics. The department feels that such specialisation should occur at the graduate level.

When the students register for higher degrees they come from different educational backgrounds with different interests. The present government policy is that no candidate will be sent abroad for higher training unless he is unable to register in the relevant (domestic) university department. The department has an exchange programme with other universities and institutions through which it is possible for staff and post-graduate students to obtain any relevant information.

Post-graduate training in agricultural economics at Khartoum started in the late fifties and has since expanded. The candidates come from various institutions and different agricultural backgrounds which include the Faculties of

- Agriculture
- Economics and Political Science.

The majority are graduates in Agriculture.

According to the performance of the student, he is awarded a B.Sc. degree and ranked as:

1. Division I or
2. Division II Upper
   Division II Lower or
3. Division III.

Every B.Sc. student has the right to apply for higher studies, but he does not have the right to register. When the applicant holds either a Division I or II degree, there is usually no difficulty in his registration, especially if his major field is agricultural economics.

Where there is post-graduate training in the Faculty, the M.Sc. degrees are purely research oriented. There is demand for post-graduate course-work. The lack of such courses is attributable mainly to the limited number of qualified staff. For the development of a strong post-graduate training programme the department needs a greater number of qualified staff to teach and to supervise the students.

The most important problem is financing the research work because funds are very limited. It has always been the case that the University offers a limited number of scholarships for M.Sc. degrees in certain problem areas. The Department has not been able to secure any scholarships from foreign sources but efforts are being made in this direction.

Another problem of post-graduate training is the better job opportunities outside the University.

The department has set out a programme for future development and, in this connection, they have absorbed a number of graduates as teaching assistants, some of whom have been sent for further studies abroad.

## 2.2 El-Minya-Assuit University, Egypt MAHMOUD ELSHAHAT

The Department of Agricultural Economics followed the development of the Faculty of Agriculture at Minya. The Faculty of Agriculture was first a higher institute for agriculture. In 1969, the Higher Institute of Agriculture was turned into the Faculty of Agriculture at Minya and affiliated to Assuit University, and the Department of Agricultural Economics was established. In 1971 a post-graduate training programme was started. In 1973 we had our own curriculum. Then graduate students started to register to study toward then M.Sc. in agricultural economics.

The staff members got their training mainly from abroad.

Students are only eligible to do their graduate work in the department, if they have B average in the courses of economics, agricultural economics, rural sociology and statistics. The M.Sc. students should complete minimum 16 credit hours of course work and write an acceptable thesis equivalent to 6 credit hours. They are required to the areas of economic theory (micro and macro), mathematics, statistics, production economics and research methods. A minimum of two years is required to get M.Sc. degree.

The Ph.D. students should have a minimum of B average in their M.Sc. course work to be eligible to enroll for Ph.D. The students should complete a minimum of 32 credit hours of course work after M.Sc. and write a thesis equivalent to 8 - 10 credit hours. They are required to the areas of economic theory, history of economics, money and banking, econometrics, advanced statistics, production economics, statistics and research methods. The department provides graduate work toward M.Sc. and Ph.D. in:

- agricultural economics
- agricultural extension
- rural sociology.

Problems:

The main problems hampering the rapid development of the post-graduate training programmes are:

- shortage of staff
- inadequate residential and office facilities
- shortage in library facilities
- instability of staff members
- research finance and
- lack in administrative training.

Toward a solution

Donor organisations should, if possible, try to communicate with the heads and staff members of different agricultural economics departments in African universities. This might be helpful to solve the financial problems for both, staff training and research. Also the heads of departments could get in touch with each other and meet once a while. This may be helpful toward:

- staff exchange
- working in local problems in Africa
- understanding different institutions
- developing joint research work.

## 2.3 Ain Shams University / Egypt M. S. EL ADEEMY

In Egypt the Agricultural University education started in 1936 and the Faculty of Agriculture, Cairo University was initiated. In 1942 the University of Alexandria was established andosecond Faculty of Agriculture was established. In 1950 the University of Ain Shams came into existence and since that time the number of faculties of agriculture has increased to eleven all over the country.

Every faculty is trying to provide students with adequate knowledge in different agricultural fields. Judging by the number of under- and post-graduate students, number of departments and staff, the Faculty of Agriculture of Ain Shams University is the second largest Faculty of Agriculture in Egypt.

### Agricultural Economics Department

The Department of Agricultural Economics was established at the inception of the Faculty of Agriculture in 1950. It comprises three different branches, namely, agricultural economics, rural development and planning and agricultural co-operation. Besides teaching and training, the Department undertakes several research work on the Egyptian economy, viz. production economics, farm management, marketing, rural sociology, extension, and co-operation.

The Department works in collaboration with local and international organizations. Staff members offer their assistance as consultants to local and international organizations.

The number of staff members at present is seven in addition to 10 Assistant Lecturers and 11 Demonstrators.

The Department offers the degrees of M.Sc. and Ph.D.. At present 45 students are registered for M.Sc. and 15 for Ph.D. The main requirements for a student to register in the Department is to have a B.Sc. in Agricultural Economics with minimum final grade "Good". Post-graduate students are Egyptians, but also Iraquis, Syrians, Libyans and other Arab subjects in addition to few African students.

Post-graduate studies in the Department depend on both course work and thesis programmes. A student has to pass a specified number of courses which take normally three terms, then he has to prepare a thesis in a topic decided upon earlier.

### 2.4 University of Nairobi - Kenya

A. WEBER

The Department of Agricultural Economics was established at the inception of the Faculty of Agriculture in July, 1970. It offers courses in social science subjects which represent one-sixth of 2600 contact hours which students receive during their B.Sc. (agric.) 3-year course. The B.Sc. graduates are general agriculturalists who received insufficient training in agricultural economics to fit them for specialist appointments such as in farm management, marketing or agricultural finance.

### POST-GRADUATE TRAINING

In 1973 the Department of Agricultural Economics initiated and subsequently conducted two M.Sc. programmes, one in Agricultural Marketing and one in Agricultural Extension. These specialised M.Sc. programmes were the consequence of a decision reached between East African Universities at the Lusaka Conference on

May 22, 1974. Accordingly in addition to Nairobi, Makerere University (Uganda) offers M.Sc. programmes in Agricultural Planning and Morogoro (Tanzania) in Production Economics and Farm Management. Other M.Sc. courses were scheduled for Khartoum (Sudan) and Haile Selassie University (Ethiopia).

The Department of Agricultural Economics of the University of Nairobi administers two types of M.Sc. programmes:

a. by course work and thesis in marketing and extension, and

b. by thesis only in all fields of ag economics where proper supervision can be secured.

The first M.Sc. programme in agricultural extension by coursework and thesis (24 months) was started in 1973. Even though some success has been reflected, the present composition and specialization of the academic staff is not favourable for the implementation of a second programme in agricultural extension.

The first M.Sc. programme in agricultural marketing by coursework and thesis (24 months) was started in June 1974. The original entry of 17 (one withdrew) has proved to be too high, especially with respect to supervisory work. The second course with 10 students commenced in January, 1976 and the third course will be mounted during the academic year 1976/77. The large financial support of these programmes through the German Academic Exchange Service (DAAD) and others needs special mention.

The M.Sc. programme by thesis only has started, but this programme fails to provide advanced courses in economic theory, agricultural economics subjects and research methods, areas where most students have not received sufficient training in the undergraduate programme. No candidates have been registered in this programme since 1973 because of the shortage of suitable supervisors.

To train highly qualified manpower in the full range of agricultural economics subjects and to promote Kenyanization of the teaching staff at a faster rate, the Department of Agricultural Economics will have to terminate the specialized M.Sc.programmes in Agricultural Marketing and Agricultural Extension. A new M.Sc. programme with expanded curriculum seems to be essential for the Department's development. The proposed M.Sc. programme will concentrate on Agricultural Economics in general and introduce major and minor options in subjects such as Farm Management, Agricultural Marketing and Development Economics according to the commitments, qualifications and availability of staff resources. This new programme is expected to start by 1st October, 1978. This is likely to succeed with support from the Department of Economics and the Faculty of Commerce.

The already very challenging and formidable commitment in M.Sc. programmes make it quite impossible to undertake Ph.D. programmes before 1980/81. Any attempt to start Ph.D. programmes before the staff is localized to a very substantial extent will probably fail. Overseas Ph.D. training is considered more economical and the most feasible and beneficial solution to the Department and the University at least for the present.

## Problems and solutions

The three basic functions of the Department are teaching, supervision and, finally, research by staff members. To do this, experienced staff and finance are needed. Short term teaching contracts force teaching staff to concentrate heavily on undergraduate and graduate teaching and supervisory work with an inevitable neglect of research. The heavy staff contributions to post-graduate work are obtained by sacrificing serious research which could otherwise be conducted by staff. Localising the teaching staff is necessary and will bring a change towards research conducted by staff members.

## 2.5 University of Dar es Salaam, Tanzania L.A. ODERO-OGWEL

The Department of Rural Economy and Extension started in the mid 1960's as part of the then Morogoro College of Agriculture and was later absorbed into the Faculty of Agriculture which was established in 1969.

Up to the end of the 1973/74 academic year, the department was concerned mainly with the training of undergraduate students in a wide range of courses in rural economy, extension, rural sociology, political economy and development studies. In the 1974/75 academic year a new and more specialized undergraduate programme was launched. In the final year of the degree course the students can specialize e.g. in rural economy. This new specialized course has been mounted at the request of the Government whose manpower demand requires emphasis in specific areas.

Up to the end of the 1973/74 academic year, the post-graduate training in rural economy and extension was undertaken by thesis only. From 1974/75 a programme has been introduced to be undertaken by thesis and course-work. The course-work is undertaken for one academic year. Flexibility has been built into the programme to allow the students to specialize in any branch in rural economy and extension.

The major problems which affect the post-graduate training in the university include:

Finance - In all aspects of research and effective supervision and teaching, finances are needed and these are often lacking.

Quality of students - Best students are often attracted overseas. This poses a major problem in the selection of students to do post-graduate studies within the country.

Staffing - Short contracts of expatriates do not allow continuity and effective training on the post-graduate level. Training of locals to work as trainers becomes important, lack of staff poses a major obstacle in expanding the post-graduate programme in agricultural economics.

**Course organization** - This needs to be improved to reflect sequence and applicability.

**Opportunities for agricultural economists** - The demand for agricultural economists is high in other sectors which often attract quality personnel through financial incentives. This means that financial rewards for agricultural economists must remain high to attract quality graduates to the University.

The staff development policy is based on students doing intensive studies overseas and returning to Tanzania to write up their dissertations. The overseas post-graduate training is supposed to offer students basic tools to do effective research.

## 2.6 University of Zambia, Lusaka B. QURAISHY - I.M. NGWASHI

The Department of Rural and Extension Education (Department of Agricultural Economics) started in 1971. Since the Department is fairly new its teaching programme has been limited to the undergraduate level. The programme of post-graduate training in agricultural economics has recently been initiated along with other disciplines. The specific objectives of creating the post-graduate programme include the following:

(a) to help the overall development of the school by supplying it with trained staff to carry on teaching and research duties,

(b) to supply the government and other national research and teaching institutes, with a locally and well trained personnel, capable of solving domestic agricultural problems and

(c) to promote research on local problems through M.Sc. and Ph.D. dissertations.

The availability of experienced staff will definitely result in an active programme, firstly at M.Sc. level and later at Ph.D. level. In its future strive to promote a post-graduate programme, the Department of Agricultural Economics will need the genuine support of the ministries, research organizations, and academic institutions. The support should be in the form of sending future research staff and policy-making personnel to the Department for post-graduate training. The Department will also need financial aid from the institutions mentioned and international organizations to launch an effective post-graduate training.

Other problems which need to be worked on are the recruitment of suitable candidates and the establishment of staff development programmes which are major bottlenecks in developing an effective post-graduate programme. The planned shifting of the Faculty of Agriculture to the rural area is expected to give students an appreciation of rural problems.

## 2.7 University of Malawi, Lilongwe

D.A.G. GREEN

The University was established in 1964 during the year of Independence. The University is faced by an unsatisfied demand for trained young men and women. Its limited resources are almost entirely devoted to attaining such professional qualifications as diplomas and first degrees.

There are three constituent colleges in the University:

- Bunda College of Agriculture
- Chancellor College and
- Polytechnic.

The Bunda College of Agriculture offers training in general agriculture at two levels:

- the three-year Diploma
- the four-year Degree

The general degree in agriculture is intended to equip the student to solve practical agricultural problems. The basic training in general agriculture has no room for specialisation within the present constraints of priorities, available resources and educational level of entrance.

There is no formal post-graduate training programme in agricultural economics available within Malawi. Promising students go abroad for training programmes at post-graduate level. Teaching fellowships are offered as an incentive for further training overseas. Such graduates are expected to raise their level of understanding in their chosen subjects in anticipation for overseas training initially to Master's and later to Doctorate level.

The major problems facing post-graduate training are:

- the present high demand for technically trained graduates,
- a very high student/staff ratio,
- lack of lecturers,
- the short-term employment of expatriate staff ist not conducive to running long term programmes,
- the high attraction of overseas training,
- the low attraction of a university career,
- the weak links between the University and the Government Ministries result in a lack of co-operation and
- the lack of coordination between government institutions and the University in carrying out post-graduate training programmes.

A post-graduate training programme closely allied to technical agriculture could develop. Such development is an essentially long-term aspiration.

## 2.8 Université Nationale du Zaire, Yangambi E. F. TOLLENS

The three Faculties of Agronomy (Kinshasa, Lubumbashi, Kisangani) were joined in 1971. In 1973, the Faculty of Agronomy was opened at a new location, Yangambi, the principal agricultural research station of Zaire. The specialisation in agricultural economics started in 1969. The first graduates emerged in 1972. The course programme in the Faculty of Agronomy is organised into two fields. The first takes three years and leads to the Degree of "Gradué en Sciences Agronomiques" with three options: (1) general agronomy, (2) forestry and (3) agricultural engineering. The second takes two years and results in the Degree of "Ingénieur Agronome" with, again, three options: (1) general agronomy (sub-divided into five directions of specialization), (2) forestry and (3) agricultural engineering.

A further post-graduate training possibility is, as yet, still in the planning stages. It involves the preparation and public defence of a doctoral thesis in agricultural sciences.

The Faculty is hampered by a number of problems:

- lack of adequate library and documentation services,
- lack of local resources to finance and operate the teaching and research activities of the department and
- lack of qualified staff due to high turnover rate of junior staff.

The future possibilities for strong post-graduate training in agricultural economics are very poor.

## 2.9 University of Benin, Togo

I. A. BERTHELOT

It is intended that the students for special training in rural development will come either from the Faculty of Agronomy, where they will have completed a three-year course, or from the Faculty of Economics, where they will have followed the three first years with specialisation in general economics or in business management.

The University is in the process of creating a post-graduate training programme next year in agricultural economics. This training will be different from the usual post-graduate training in that it will be practically oriented training of specialists in rural economic development.

As much as possible, the courses will be problem oriented. A large portion of the course will be devoted to field work in which the student will make multi-disciplinary field surveys.

In addition to post-graduate training, the institute will also organize refresher courses for the existing personnel of the Ministry of Agriculture and other agricultural organizations.

The practically oriented programmes need staff which is well trained in field work.

## 2.10 University of Ibadan, Nigeria

S.O.OLAYIDE and L.F.MILLER

Post-graduate training constitutes an aspect of manpower development whose importance was not appreciated during and immediately after Nigeria's independence. At the time, it was thought that post-graduate qualification restricted the candidates to university teaching alone. This is no longer the case.

The demand for post-graduate training has increased in all sectors of Nigeria's economy. Effective demand for post-graduate training will be in the following sectors.

(a) Universities - since student population has increased considerably,

(b) Federal ministries are expected to fill at least 20 % of their posts with post-graduates and state governments 15 %,

(c) The private sector is expected to increase its consumption of post-graduates,

(d) The corporations on the federal and state levels are expected to need post-graduate staff to the tune of 20 percent,

(e) The research institutions are expected to require that 80 percent of their staff possess post-graduate degrees

(f) There is also expected to be great demand for post-graduates for polytechnics, technical colleges and other training institutes.

Based on the above assumptions, the estimated demand for the overall qualified post-graduate staff in Nigeria, by 1980, is expected to be about 24,380 (M.Sc. + Ph.D. level). This estimated demand raises the fundamental issues of supply. Of the total demand for post-graduates, it is expected that about 2,190 will be graduates with M.Sc. and Ph.D. Degrees in agricultural economics. This demand will need to be met if the country will effectively implement its programmes for integrated rural development and overall national economic growth targeted in the Third National Development Plan,1975-1980.

## POST-GRADUATE PROGRAMME IN AGRICULTURAL ECONOMICS

The Department of Agricultural Economics started as the Department of Agricultural Organization in 1962 and began with an all-research post-graduate programme leading to an M.Sc. Degree in 1965. Since then there has been a re-organization which introduced a modified scheme which provided courses in economic theory and statistics, econometrics and research methodology. The modified scheme operated until the end of 1969/70 with three graduates. The Department again under-went a re-organization to incorporate more courses for a doctoral programme. The number of candicates under various schemes has been limited to match the available staff competent in teaching and supervision.

In 1971/72 the Rockefeller Foundation initiated a programme for providing additional M.Sc. scholarships for agriculture and social science post-graduate students. Under this programme, nine Agricultural Economics students have received support which has raised the enrollment substantially, following the increase in staff positions. This also increased the intake of students from other African countries doing Agricultural Economics at M.Sc. level. The programme of taking students from other African countries forces candidates to research into economic problems of their countries' agriculture.

The development of doctoral programmes has been delayed for a number of reasons:

(1) to allow a sound M.Sc. programme to be fully developed,

(2) to allow for members of staff to "mature" before embarking on any doctoral programme,

(3) to allow the development of comprehensive research projects on a departmental basis as a means of providing a reliable data base for doctoral dissertations and

(4) the need to strengthen staff positions especially in the quantitative fields so that advanced courses can be adequately taught.

The first doctoral candidates were enrolled in the 1973/74 session after some of the above limitations were substantially overcome.

Recently the University Senate has approved a proposal whereby a one year all-course-work M.Sc. degree will be awarded whilst a two year programme of course-work plus thesis will lead to M.Phil. Degree. The doctoral degree will require a minimum of three sessions after B.Sc. degree.

### Research and Publications:

The Department has operated many research projects which can be grouped under four main headings:

(1) individual staff projects,

(2) group projects,

(3) graduate students projects and

(4) public service projects.

### Conclusion:

Major efforts are needed:

(a) to provide incentives to students to enable them to pursue post-graduate degrees,

(b) to provide adequate funds for research,

(c) to meet basic requirements, especially that of an accelerated staff development scheme and

(d) to provide adequate agricultural facilities in Nigeria to implement planned programmes.

## 2.11 University of Ife, Ile-Ife, Nigeria

R. O. ADEGBOYE

The Faculty of Agriculture in Ife grants a single undergraduate degree, (B.Sc.) whereby the students enjoy only a small degree of specialisation in the last year of the four year programmes. This does not prepare a student for a specialised training in agricultural economics either at Ife or any other university unless such students are prepared by a number of remedial courses.

The post-graduate training at the University of Ife in the Department of Agricultural Economics commenced in 1967 by putting students through one year post-graduate diploma courses. This programme was discontinued in 1975, because of the lack of enthusiam shown by the prospective employers towards the graduates thereof. A two-year Master of Philosophy programme commenced in 1973. The first year consists of course work and the second of the preparation and defence of a thesis.

The Department has adequate staff and teaching materials. A number of scholarships (from the Government, private corporations, institutions and the Ford Foundation) support staff development and post-graduate training. This applies also to students from other West African Countries.

There is a number of problems affecting post-graduate training:

- There is a very low standard in the secondary schools. The students do not have the same level.
- The admission procedure is slow and, therefore, a student can miss the beginning of the academic year.
- A minor problem is the lack of publicity about the existence of a Department of Agricultural Economics.
- The students have a poor background in English.
- There is a big gap between the salary payable to a graduate worker and the scholarship received by a student.

The last mentioned problem is being looked into by the Government. It has been suggested that the post-graduate students should receive scholarships on a scale equivalent to what they would earn had they taken up employment instead of continuing their education. There is reason to be optimistic about the future because the awareness for the need for post-graduate training in agricultural economics has been established.

## 2.12 University of Nigeria, Nsukka L. OBIBUAKU

This Department does not currently have post-graduate students, although a post-graduate programme has been approved by the Senate. The first batch of graduate students are expected to enrol in within the 1976/77 session. Highlights of the programme are set down below:

The graduate programme is organized to prepare students for carriers within the agricultural economics profession by means of:

a) courses in traditional subject matter as well as on the frontiers of knowledge in the field;

b) research experiences designed to give competence in scientific methodology, and

c) seminar and discussion opportunities to enable the student to sharpen his ability and to express his thoughts in the field of study.

The M.Sc. in Agricultural Economics is normally a six terms programme. The first session of the programme will be devoted primarily to course work, while the second year will concentrate mainly on the thesis portion of the degree.

The Ph.D. programme lasts at least six terms after the M.Sc.

M.Sc. Qualifying Examinations
There shall be a qualifying examination at the end of the first year. For a pass, the candidate shall earn a minimum grade of 'B' in each paper.

For the M.Phil + Ph.D. examinations, students will be required to present a thesis based on their research programme at the end of at least six terms of full time research.

Such students including those presenting an M.Sc. thesis will be required to appear before a board of Examiners for an oral examination. The Examination board shall consist of the external and the internal examiners.

The normal credit load for the Masters degree in Ag. Economics is 24 hours. This includes courses in the major as well as the subsidiary areas.This course programme must include at least 3 hours of statistics.

AREAS OF SPECIALIZATION

The major field of study is agricultural economics, however, graduate students may choose areas of special interest such as marketing, agricultural extension, farm management, and agricultural finance. Minors may be taken in a wide variety of other areas according to the interest of individual students.

1st Option: Specialization in Marketing and Cooperatives:

| Major: | | Credits |
|---|---|---|
| Ag. Econ. 503 | Marketing and Cooperatives | 6 |
| Ag. Econ. 501 | Agricultural Development, Planning and Policy | 4 |
| Ag. Econ. 502 | Agricultural Economics Research Methodology | 2 |
| Ag. Econ. 506 | Applied Econometrics in Agriculture | 3 |
| | | 15 |

| Minor: | | |
|---|---|---|
| Ag. Econ. 504 | Farm Management and Production Economics | 6 |
| Elective | | 3 |
| | | 9 |

2nd Option: Specialization in Agricultural Extension:

| Major: | | |
|---|---|---|
| Ag. Econ. 508 | Agricultural Extension | 6 |
| Ag. Econ. 501 | Agricultural Development, Planning and Policy | 4 |
| Ag. Econ. 502 | Applied Statistics Research Methodology | 2 |
| Ag. Econ. 506 | Applied Econometrics in Agriculture | 3 |
| | | 15 |

| Minor: | | |
|---|---|---|
| Ag. Econ. 509 | Rural Sociology | 6 |
| Elective | | 3 |
| | | 9 |

3rd Option: Specialization in Farm Management:

| Major: | | |
|---|---|---|
| Ag. Econ. 504 | Farm Management and Production Economics | 6 |
| Ag. Econ. 501 | Agricultural Development, Planning and Policy | 4 |
| Ag. Econ. 502 | Agricultural Economics Research Methodology | 2 |
| Ag. Econ. 506 | Applied Econometrics in Agriculture | 3 |
| | | 15 |

| Minor: | Credits |
|---|---|
| Ag. Econ. 508 Agricultural Extension | 6 |
| Elective | 3 |
| | 9 |

4th Option: Agricultural Finance and Farm Accounting:

| Major: | |
|---|---|
| Ag. Econ. 505 Agricultural Finance and Farm Accounting | 6 |
| Ag. Econ. 501 Agricultural Development, Planning and Policy | 4 |
| Ag. Econ. 502 Agricultural Economics Research Methodology | 2 |
| Ag. Econ. 506 Applied Econometrics in Agriculture | 3 |
| | 15 |

| Minor: | |
|---|---|
| Ag. Econ. 507 Land Economics | 6 |
| Elective | 3 |
| | 9 |

## 2.13 Ahmadu Bello University - Zaria, Nigeria G.O.I. ABALU

The Department of Agricultural Economics and Rural Sociology expects to start a post-graduate programme leading to an M.Sc. in Agricultural Economics in the 1977/78 academic year.

The M.Sc. in Agricultural Economics will be a full-time two-year programme designed to prepare candidates for a career as a professional agricultural economist in the public and private sectors and/or to provide the students with an adequate foundation for an academic career.

Candidates who have obtained a B.Sc. degree with a first or second class honours (or equivalent ratings) in Agriculture, Agricultural Economics, or Economics from any recognized university are eligible for admission. Candidates with similar qualifications in related disciplines (Mathematics, Statistics, Law, Sociology, Government, Psychology and Business Administration) may also be considered for admission.

PROBLEMS

(a) Attracting desirable candidates may be a major problem as job opportunities in ministries are often very attractive for the potentially good students. Other students may opt to do their M.Sc. programme elsewhere.

(b) Interrelationships with other departments will be needed to support an effective M.Sc. programme.

POSSIBLE SOLUTIONS

(a) The Department could have all courses taught within by the existing staff.

(b) It could recruit special staff to teach special subjects.

(c) It could prepare its students at undergraduate level so that they are better able to cope with their counterparts in other departments.

## 2.14 University of Ghana, Legon

J. A. DADSON

Post-graduate training in agricultural economics consists of programmes leading to M.Sc. and Ph.D. degrees. Presently, concentration is on the M.Sc. degree offered by the Department of Agricultural Economics. In addition to this, a new post-graduate programme in agricultural administration consisting of a one year graduate diploma course and a two-year master's course is to be started in October, 1976.

### M.SC. (AGRIC.) PROGRAMME IN AGRICULTURAL ECONOMICS - OBJECTIVES

The major employers of agricultural economists include universities and research institutes, the development and finance agencies, and the public services. This naturally calls for the type of training which turns out people with: (i) a firm grasp of economic theory and principles,(ii) the capacity to analyse public economic policies,(iii) the ability to apply the principles of empirical and economic analysis to research on economic problems, and (iv) a foundation on which they can advance their skills in the profession as researchers, analysts or administrators.

### TRAINING PROGRAMME

The training programme consists of lecture courses and a thesis. The entry qualification is a good degree in agricultural economics, or economics, or any related subject from an acceptable university. Most entrants have specialization in agricultural economics. But others from economics, geography and education also apply. Degree holders with a specialization in agricultural economics take the following graduate courses: economic theory, econometrics, agricultural development, planning and policy and statistics. Candidates without an agricultural economics degree back-ground may be required to take additional courses designed to make up deficiencies in appropriate subjects.

### PROBLEMS

Major problems hampering the rapid development of graduate programmes in general are the following: (a) understaffing, (b) small student enrollment, (c) inadequate residential and lecture room facilities, (d) inadequate library facilities, (e) prestige of overseas training, (f) late submission of thesis.

### Solutions to the problems

It is recommended that

(a) staff recruitment should be expanded,

(b) physical development should be resumed to expand the department's lecture space facilities as well as student residential facilities.

If these recommendations are followed strictly the post-graduate training in the University of Ghana will be expanded considerably to include more candidates at the Ph.D. level.

## 2.15 University of Science and Technology, Kumasi, Ghana

I. ANIM-APPIAH

The post-graduate programme in agricultural economics at the University of Science and Technology began in the 1973/74 academic year. But as yet no student has completed all the requirements for the M.Sc. degree in agricultural economics. Only one student is in the coursework pipeline and he will not embark on his research project until January 1977.

Thus it can be seen that as far as research in the graduate programme is concerned, the University has no experience.

## 2.16 University of Cape Coast, Ghana

K. OSAFO-GYIMAH

The University has no post-graduate training. Concentration is on undergraduate training in agriculture. Agricultural Economics is, however, taught to the undergraduates.

The major problems in the training of agricultural economists is that of getting qualified staff to handle both course-work and research. Lack of finance also is a constraint in launching an effective post-graduate programme.

## 2.17 University of Sierra Leone, Freetown

I.I. MAY-PARKER

Agricultural economics is being taught to post-graduate students doing agriculture in the University. However, there is no extensive training programme for post-graduates in agricultural economics. The agricultural graduates who are enclined to do agricultural economics from the University of Sierra Leone normally use the facilities offered at the University of Ibadan and Ife to do their post-graduate training.

The major obstacles to launching an effective post-graduate training in agricultural economics include lack of staff and finance to conduct an effective programme. Often, too, salaries for agricultural economists have not been attractive enough to bring in quality material. However, with the improvement envisaged, the programme is likely to be launched in future.

## 2.18 University of Liberia, Monrovia

B. TEMPLE

In the College of Agriculture and Forestry, University of Liberia, there is no Department of Agricultural Economics. Courses in agricultural economics are offered in the general agricultural programme of the College.

At present, the College offers B.Sc degrees only in general agriculture and in general forestry. The college has carried out three intermediate level programmes in addition to the degree programmes:

- Training programmes for Forest Rangers for the Ministry of Agriculture,
- Training programmes for home economics,
- Training programmes for ornamental horticulture.

One of the major problems of post-graduate training is the recruitment of staff. Another is the financing of post-graduate studies. The staff development programme is weak because the private sector offers higher salaries than the university.

## IV. The employment situation for agricultural economists

Plenary Session: Friday, July 23, 1976

Chairman: Prof. E.T. GIBBONS

1.1 First Speaker: Mr. KIMANI, Ministry of Agriculture, Nairobi (Kenya).

The Ministry of Agriculture has an extension staff of six thousand four hundred and fifty-two (6,452) who are involved in teaching farmers modern agriculture and training other extension service staff. The training discussed in this paper, however, will deal mainly with training as done in various agricultural training institutions.

The Ministry of Agriculture has a Training Division whose responsibilities are:-

(a) Plan and co-ordinate all aspects of agricultural training for which the Ministry is responsible.

(b) Work with training institutions to promote their training activities according to manpower requirements.

The training is divided into three groups:

(a) Pre-service staff training,

(b) In-service staff training, and

(c) Farmer training.

### PRE-SERVICE STAFF TRAINING

Pre-service training in agriculture is available at three levels viz. Graduate, Diploma and Certificate.

(a) Graduate training: Graduate training is conducted mainly at the University of Nairobi although other Universities do train a limited number of Kenyans. The Ministry of Agriculture is represented in the Faculty Board and consultations take place between the Ministry and the University with regard to trained manpower needs and the training content. The University is, however, autonomous and carries out the training functions independently of the Ministry of Agriculture.

Until 1970 Kenya relied on Universities outside the country for the supply of agricultural graduates, mainly Makerere. It was, however, considered that Kenya's demand for agricultural graduates could not be adequately met from these sources as the demand in those countries was also increasing. It was decided to set up a Faculty of Agriculture at the University of Nairobi in 1968. The first group of students graduated in 1970.

The Weir Agricultural Education Commission (1967) projected the graduate demand in Kenya at an average of fifty per year during 1970 - 1980 period. The Faculty of Agriculture is at present geared to producing about that number annually. The Faculty offers general agriculture degree to meet the country's urgent needs. As the secondary schools develop, it is expected that entrants will be better trained in basic sciences and it should be possible then to include aspects of more specialised training in the first degree.

Table I shows the number of graduates expected from the University of Nairobi. The number of Kenyan students undertaking degree courses abroad is difficult to estimate as the arrangement for such training is largely private.

Just like in the case of graduates in agriculture, Kenya relied mainly on Makerere for the supply of graduates in Veterinary Medicine until a full Faculty of Veterinary Science was established in Nairobi in 1961. The Weir Commission projected Kenya's requirements for Veterinary Officers at 20 per annum between 1970 - 1980 period. This was, however, an underestimate and the Faculty of Veterinary Medicine has raised its annual intake to about 60.

(b) Diploma Training: Diploma Training is done at Egerton College. Egerton College was founded in 1939 for the purpose of training expatriate farmers and farm managers. After 1960 the College was used for training students for service in the Ministry of Agriculture. In 1965 Maseno Agricultural College which was also conducting diploma courses in Agriculture reverted to a Teacher Training College and all diploma training has since then been done at Egerton College.

## IN-SERVICE TRAINING:

The Ministry of Agriculture acting in conjunction with the Directorate of Personnel is responsible for arranging in-service courses for agricultural staff. The courses can be long or short depending on service needs and can be undertaken either locally or abroad depending on the availability of the training required.

(a) Postgraduate Training: Until 1975 nearly all the postgraduate (M.Sc.) training was undertaken abroad. The requirement for officers with postgraduate training has increased considerably over the last few years and training large numbers of students abroad is a very expensive undertaking. Conditions of training and the research work they would do abroad are in most cases not related to local conditions. In 1974 the Ministry of Agriculture and the University of Nairobi explored the possibility of mounting M.Sc. courses at the University and decided to start a few M.Sc. programmes. Each course would take a total of 24 months comprising of nine months taught course at the University followed by 15 months research work in the field. The research topic would be relevant to the priority development projects. An M.Sc. course in Agronomy was started in 1975 followed by Animal Husbandry and Entomology courses at the beginning of 1976. Plant Breeding and Irrigation postgraduate courses are scheduled to be started in October, 1976. Other postgraduate courses would be mounted depending on manpower requirements. Initially the Ministry of Agriculture is sponsoring most of the students for these courses but gradually other employers will be expected to sponsor an increasing number of students.

(b) Post Diploma Inservice Training: The Ministry does not yet have a programme under which a Diploma holder can study up to graduate level while in service. The Directorate of Personnel is not agreeable to sponsoring such training until projections of trained manpower requirements are fully worked out. At present a diploma holder wishing to do graduate studies has to resign his appointment. Scholarships for the training are provided by the Ministry of Education.

Diploma holders are, however, given short in-service courses, either locally or abroad, the nature and the duration of which is dependent on the requirements of the jobs they are expected to perform.

## TRAINED MANPOWER REQUIREMENTS IN AGRICULTURE AND RELATED INDUSTRIES

Programming of staff training in the Ministry of Agriculture has become a difficult task owing to the fact that there is no reliable indicator of trained manpower needs for the present and the future. The Agricultural Education Commission which made a report to the Minister for Agriculture in 1967 studied the agricultural manpower requirements in Kenya in some detail. The Commission worked out a projected demand of all levels of trained manpower in agriculture up to 1980. The Commission, however, admitted that it could not get a clear picture of manpower requirements in the private sector. These projections were therefore not complete but they have in the past been used as a guide in programming staff training. It is now apparent that the figures shown in the Commission's report have been very much overtaken by events and cannot be relied upon for planning purposes. The Ministry of Agriculture is the main employer of trained agriculturists and guides its training to meet its requirements with a few extras for other employers in the public service. The exodus of trained staff from the Ministry of Agriculture to the other employers during the last few years has been alarming and has tended to frustrate programming of training in the Ministry of Agriculture. While such movement of staff is not in itself a loss to the country it tends to complicate the Ministry's plans. For any manpower planning to be meaningful it has to take into consideration all the staff requirements of the employers both in public and private sector. Such planning should be thorough, showing clearly the specialisation needed as this is a guiding factor not only in revising of curriculum in the training institutions but also in deciding whether to start new courses or drop others. Projections for manpower requirements should cover a period of about ten years and should be reviewed after every two years or so in order to allow for any changing circumstances. Such an exercise could be undertaken jointly by the Economic Planning Division of the Ministry of Agriculture and the Manpower Planning Section of the Ministry of Finance and Planning. Employers would also participate fully as far as their organisations are concerned.

Table I shows the requirements of trained manpower as prepared by the Weir Commission and Table II shows the recently estimated demand in the Ministry of Agriculture alone during a three year period 1979 - 1981.

Graduates:

Weir Commission estimated 88 per annum.

Ministry of Agriculture estimated demand 177 per annum. The supply from the University of Nairobi cannot even meet the Ministry of Agriculture requirements. There are, of course, some students studying Agriculture in other Universities but the number is rather small. The requirements for the organisations listed in Table I plus that of the Ministry of Co-operative Development, which is now employing agriculture graduates (9 in 1975) is also quite large. Their requirement must have increased as well. The requirements for the private sector is at present unknown. Besides, the need for post-graduate training is increasing.

Diplomates:

Weir Commission estimated 87 per annum.
Ministry of Agriculture estimated demand 289 per annum. Capacity-wise Egerton College can turn over 220 diplomates annually as the total for the three years is about 650. Like in thecase of graduates, requirements for the organisations listed in Table II plus the Ministry of Co-operative Development and the private sector should be catered for by Egerton College.

Table I: Projection of Trained Manpower Requirement in Agriculture 1970-1980 (WEIR)

| ORGANISATION | GRADUATES + POSTGRADUATES | | | DIPLOMATES | | |
|---|---|---|---|---|---|---|
| | Calculated In post 30-6-70 | Total wastage over 10 years period | Gross additional staff required by 1980 | Calculated total in 30-6-70 | Total wastage over 10 years period | Gross additional staff required by 1980 |
| Central Agric. Board | 16 | 8 | 17 | 21 | 11 | 30 |
| Department of Agriculture | 239 | 135 | 351 | 453 | 226 | 492 |
| Planning Division MoA | 10 | 0 | 7 | | | |
| Department of Settlement | 20 | 7 | 20 | 15 | 4 | 9 |
| Department of Vet. Services | 95 | 79 | 171 | 154 | 17 | 34 |
| Department of Settlement | 6 | 2 | 6 | 8 | 2 | 6 |
| Faculty of Vet. Medicine | 50 | 30 | 40 | | | |
| Faculty of Agriculture | 5 | 10 | 35 | | | |
| Egerton College | 30 | 20 | 40 | 15 | 20 | 20 |
| Ministry of Education | 10 | 10 | 55 | 20 | 15 | 65 |
| Agricultural Dev. Corporation | 4 | 4 | 8 | 5 | 60 | 130 |
| National Irrig. Board | 12 | 8 | 5 | 12 | 5 | 18 |
| Kenya Tea Dev. Authority | 20 | 6 | 14 | 8 | 2 | 6 |
| Agricultural Finance Corp. | 22 | 10 | 35 | 12 | 3 | 9 |
| Total | 539 | 329 | 804 | 723 | 365 | 819 |
| Average per year | | 33 | 80 | | 37 | 82 |

Source: Ministry of Agriculture, Nairobi (Kenya) 1976.

Table II: Projected Trained Manpower Needs at various levels: 1978 - 1981 Ministry of Agriculture

| | GRADUATES | | | DIPLOMATES | | | AGRIC.ASSISTS. | | | ANIMAL HEALTH/ RANGE ASSISTS. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1979 | 1980 | 1981 | 1979 | 1980 | 1981 | 1978 | 1979 | 1980 | 1978 | 1979 | 1980 |
| Department of Agriculture | 146 | 148 | 107 | 288 | 278 | 219 | 357 | 357 | 362 | 132 | 114 | 98 |
| Department of Vet. Service | 40 | 40 | 40 | 34 | 24 | 24 | | | | 104 | 104 | 104 |
| Total | 186 | 188 | 147 | 322 | 302 | 243 | 357 | 357 | 362 | 236 | 218 | 202 |
| Average Annual Requirement | | 174 | | | 289 | | | 359 | | | 219 | |

Source: Ministry of Agriculture, Nairobi (Kenya) 1976.

Table III: Postgraduate Training Requirements in the Ministry of Agriculture/Kenya 1976/77-1978/79

| | Agric. Extension | | | Animal Production | | | Crop Science | | | Farm Management | | | Agric.Engineering | | | Irrigation (Diploma) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 |
| Training Division | 2 | 2 | 2 | 6 | 8 | 7 | 3 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | | | |
| Land + Farm Management Division | | | | | | | | | | 15 | 15 | 15 | | 2 | 2 | 5 | 5 | 5 |
| Crop Production Div. | | | | | | | 5 | 3 | 4 | | | | | | | | | |
| TOTAL | 2 | 2 | 2 | 6 | 8 | 7 | 8 | 7 | 7 | 17 | 17 | 17 | 2 | 4 | 4 | 5 | 5 | 5 |

RESEARCH DIVISION:

| Animal Science | | | Soil Science | | | Plant Physiology | | | Agronomy | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 |
| 18 | 5 | 5 | 2 | 2 | 2 | 2 | - | - | 10 | 11 | 11 |
| **Plant Breeding** | | | **Plant Pathology** | | | **Entomology** | | | **Range Management** | | |
| 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 | 76/77 | 77/78 | 78/79 |
| 11 | 4 | 5 | 4 | 4 | 4 | 6 | - | 6 | 2 | 2 | 3 |

Source: Ministry of Agriculture, Nairobi (Kenya) 1976.

The projected demand for manpower 1979 - 1981 as shown in Table II may not be dead accurate but it does show that there is cause for concern particularly considering that the requirements for all the other employers have not been taken into account. This underscores the need for manpower estimates to be done as a matter of urgency. Based on these manpower estimates, major development projects to ensure availability of trained personnel can be embarked on.

## FUTURE OUTLOOK:

### (a) University of Nairobi: Faculty of Agriculture

The requirement of graduates in agriculture has proved to be higher than previously anticipated. It will be necessary for the Faculty to increase the annual intake of students. Besides, training facilities at the Faculty need to be improved and more lecturers recruited to ensure proper training of students.

Depending on the revelation of the manpower survey the students should specialise or take an option during the third year of their undergraduate training so that when they graduate they can straightaway be fitted to appropriate jobs. Postgraduate training will still be necessary depending on job requirement.

Local postgraduate training should be given more support as it is cheaper, the students study and do research under relevant local conditions and they are available to do their jobs sooner. External donors who normally provide scholarships for overseas postgraduate training should be interested into giving scholarships for local training. In this case transportation costs would not be incurred.

Owing to the isolation of the Faculty Kabete Campus from the town, accommodation for postgraduate students is at present a problem. A postgraduate hostel at Kabete would alleviate the problem.

(b) Egerton College: Egerton College has continued to play a vital role of providing the urgently needed technical officers. Previous estimates on requirement by Commissions (Weir 1967 and

Wamalwa 1972) have given underestimates and even recommended that the number of foreign students be increased. The present position does not indicate this trend. On the contrary the college should reduce foreign student intake and even expand.

### 1.2 Second Speaker: Mr. A. MUWONGE - Chief Economist,
East African Community, Arusha (Tanzania)

Mr. Muwonge outlined three major areas to be discussed: (1) the difference in performance of agricultural economists employed by the East African Community (E.A.C.), (2) the criteria for selection and (3) the optimal training.

Mr. Muwonge stated that the E.A.C. recruits agriculturalists or economists, rather than agricultural economists. He, therefore, said that the performance of agricultural economists (who are graduates of the same institutions) can be compared by the way in which they organize themselves and in their personal initiatives.

The criteria for selection are described in the E.A.C.'s Directorate of Personnel and include a degree in either agricultural economics, economics or agricultural science with a paper in agricultural economics. Candidates are also sent abroad for further training.

The optimal training of an agricultural economist depends on the challenges and initiatives required by the job.

Candidates should be articulate, diplomatic and able to identify problems. Mr. Muwonge further pointed out that E.A.C.'s agricultural economists had to take a number of non-agricultural economics courses, like diplomacy, administration and related subjects, in order to be effective.

### 1.3 Third Speaker: Dr. Q.B.O. ANTHONIO[1] Director, Joint ECA/
FAO Agricultural Division, Addis Ababa,
Ethiopia

INTRODUCTION:

Because of the basic potential for agriculture to serve as the key industry for the transformation and economic take-off of most African countries, it is imperative that this sector, being the most labour intensive in these countries, should receive more attention in terms of the quality of this major input (manpower/labour).

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[1] See also chapters V and VI.

There are basically two critical aspects from which this qualitative problem must be viewed; *firstly*. the education and training component necessary for the research, planning and development exercises, and *secondly*, the behaviouristic aspect which must focus on the removal of certain built-in social values, beliefs and taboos; and of course the often misguided aspiration and prejudices of individuals against employment in the agricultural sector. It follows therefore that in Africa the scientific and technical aspects of manpower priorities for the transformation of the agricultural sector must be combined with the psychological factor in order to achieve optimum utilization of manpower in this sector.

It must *not* however be assumed that concentration on the development of *only* the higher echelons of manpower would bring about the necessary *structural* transformation of this sector. Agriculture in Africa and of course in most developing countries is still evolving from its traditional subsistence nature. It follows, therefore, that any transformation must also involve functional education and training and reorientation (Extension Education) at the lowest level since in the final analysis it is at this level that the actual production takes place.

In other words, post-graduate training in agricultural economics, and in all agriculture for that matter, in Africa MUST have the primary objective of producing a highly skilled personnel with a reasonably *adequate knowledge of agriculture, economics, research methodology, psychology of behaviour and behavioral change, as well as how to train lower calibre staff, and the farmers.*

Apart from what has been said above in terms of planning and research, there can be no general desk statement of validity concerning manpower priorities in Agriculture or in any other sector. Such priorities would vary from country to country since they would be based on, among others, the country's programme of agricultural development, agricultural systems, market arrangements and the crops. Each country would therefore have to undertake its own manpower study within the framework of its particular circumstances to determine its priorities.

The ECA fellowship priority for agricultural training is in terms of positive measures to bring about some degree of rationalization in agricultural training at the higher levels. This is envisaged in the form of institution building and strengthening either on a regional or subregional basis. This is necessary, given the high capital and recurrent costs of providing adequate and appropriate facilities for such training and the consequent unviability of too many small institutions.

## THE TRAINING:

For clarity and precision this section is discussed under two sub-headings, namely, (A) the training components and period of training; and (B) training institutions.

### A. TRAINING COMPONENTS

### 1. Introduction:

Inevitably, there has to be at least four components of the training, namely, course work, practicals and field work, research, and a thesis. These components have to apply to both the M.Sc. and Ph.D. degree course, the difference between the two being highlighted by a longer training period, (3 - 4 years for the Ph.D.) and the in-depth thesis material for the Ph.D. (See Table I ).

Admission of candidates which is essentially on merit, should be strictly concentrated on persons with degrees in agriculture, economics or any of the other social sciences with an inevitable proviso that candidates without an agricultural background have to pass special agriculture courses designed to supplement such weakness. This is probably more important in the African context, to minimise the growing tendency of producing only "desk or laboratory experts".

**Table I :** Training Components
for M.Sc. and Ph.D. in Agricultural Economics

| Components | Period of Coverage (in weeks) | |
|---|---|---|
| | M.Sc. (2 yrs.) | Ph.D. (3-4 yrs.)[1] |
| 1. Formal Courses | 30 | 30[2] |
| 2. Practicals + Field Work | 10 | 10[3] |
| 3. Research Programme | 10 | 30[3] |
| 4. Thesis | 10 | 20[3] |
| Total | 60[4] | 90[4] |

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[1] 4 years Ph.D.Course starting with a 2 years M.Sc. course for candidates not having B.Sc. Agricultural Economics or lower level first degree. (e.g. 3rd. Class Honours).

[2] Not required after a successful M.Sc. Agricultural Economics.

[3] Additional to the M.Sc.

[4] 1 year of 3 terms of 10 weeks each.

## 2. Courses:

Courses to be covered can be grouped for simplicity into four sub-headings:-

(i) Basic Economics Courses
(ii) Basic Agricultural Courses
(iii) Agricultural Economic Courses
(iv) Courses in Research Tools.

The Basic Economic Courses, depending on background of student, should cover about 15 % - 20 % of the course hours and should include at least courses in Economic Principles, International Trade and Economic Development. The Basic Agricultural Courses, again, depending on the background of the student should cover about 10 - 15 % of the course hours and should include at least courses in Crop Husbandry, Animal Husbandry, Farm Systems and Organisations and Agricultural Problems of the country of study.

Courses in Agricultural Economics should cover not less than 35 % of the courses hours. These can be grouped into two; compulsory and optional courses. The compulsory courses have to embrace at least the following courses; Farm Management, Agribusiness, Marketing, and Agricultural Policy & Planning. These courses should occupy 25 % - 30 % of the course hours. The optional courses on the other hand will occupy about 10 % of the course hours again depending on the students background and the special emphasis (based on national needs) of the department offering the courses. Courses such as Extension Education, Sociology, Psychology, Project Evaluation etc. can be grouped as optional. Finally, courses for research tools comprising of Statistics, Econometrics, Research Methodology, Operational Research, Computer Science etc. and will occupy about 10 - 15 % of the total course hours. A summary of these courses is supplied in Table II.

Table II: Post Graduates Courses in Agricultural Evaluation
COURSE CONTENT - M.Sc./Ph.D. Agricultural Economics

| | | % of Course Hours |
|---|---|---|
| I. | BASIC ECONOMICS: | 15 - 20 |
| | 1 - Economics Principles (Advanced) | |
| | 2 - International Trade | |
| | 3 - Economic Development | |
| II. | BASIC AGRICULTURE: | 10 - 15 |
| | 1 - Crop Husbandry | |
| | 2 - Animal Husbandry | |
| | 3 - Farm Systems & Organisation | |
| | 4 - National Agricultural Problems | |
| III. | AGRICULTURAL ECONOMICS | 35 - 40 |
| | (a) Compulsory: | 25 - 30 |
| | 1 - Farm Management | |
| | 2 - Production Economics | |
| | 3 - Marketing | |
| | 4 - Agricultural Business | |
| | 5 - Agricultural Policy and Planning | |

| | % of Course Hours |
|---|---|
| (b) Optional: | 10 |
| 1 - Extension Principles | |
| 2 - Sociology | |
| 3 - Project Formulation & Evaluation | |
| 4 - Home Economics | |
| IV. RESEARCH TOOLS: | 15 - 20 |
| 1 - Statistics | |
| 2 - Econometrics | |
| 3 - Field Experimentation | |
| 4 - Research Methodology | |
| 5 - Operational Research | |
| 6 - Computer Science | |
| V. Selectives/Auditing or Make-up Courses: | 10 - 15 |
| (Not necessarily connected with the Discipline - e.g. Religion, Philosophy, Audio-Visual Aids, Photography, Typing, Administrative Procedure, Languages). | |

3. Practicals and Field Work:

The period of coverage is already specified in Table II and should include both laboratory, and farm work, as well as visits to agricultural development projects. The objective of the practicals and field work is to get students intimate and appreciative of the labour-input and constraints of the different aspects of agricultural operations and activities in as practical a way as possible.

4. Research Programmes:

This should in all M.Sc. Cases be orientated to local or national problems. For Ph.D. candidates doing overseas degree, research programmes should be, wherever possible, geared to problems of national interests as well.

5. Thesis:

Theses emanating from the M.Sc. programme should be brief and should essentially reflect a good grasp of the subject matter and preferably of not more than 100 typed pages. Ph.D. theses on the other hand should reflect greater depth of understanding and make original contribution to knowledge and should not be more than 200 typed pages.

## B. TRAINING INSTITUTIONS

Three catogories of training institutions can be identified as meeting the post-graduate training in agricultural economics in Africa. These include:-

(i) National Universities (Africa);

(ii) Sub-regional Universities or institutions in Africa; (e.g. IITA); and

(iii) Overseas Universities and Institutions.

In the case of Masters' degrees, national universities should be immediately developed to award general M.Sc. Agricultural Economics degrees while specialisation canbe restricted, until the next decade or two, at least, for the Ph.D. candidates. Sub-regional Universities are yet to feature prominently in Africa but from the role of the IITA so far observed, there is a case for a sub-regional grouping for higher degrees in Africa to cope specifically with Ph.D. programmes but at sub-regional levels - West, Central, North, East, and Southern Africa, with each sub-regional University specialising in a particular area of discipline (such as Biological Sciences, Science & Technology, Agriculture, Medical, Engineering, Humanities, Social Sciences, etc.) for higher degrees only.

Overseas institutions should preferably be used for Ph.D. candidates who have been well groomed to an M.Sc. level in any of the national or Sub-regional Universities in Africa. This reservation is made because of the need for adequate local experience rather than costs.

Finally, the main thrust is to produce post-graduates in agricultural economics as a 20 % of all agricultural post-graduates, with M.Sc. candidates forming 75 % of all such post-graduates and 25 % for the Ph.D. courses. Training should emphasize practical agriculture; research should focus on local problems and all M.Sc. candidates should be trained locally. Ph.D. candidates should be M.Sc. graduates to be trained overseas for the next decade or two in specially adaptive institutions with arrangements for Thesis to be based on local research in 90 % of cases. Arrangements should soon be well in hand to develop sub-regional cooperation in Africa to train Ph.D. candidates on the Continent in the immediate future.

1.4 Fourth Speaker: Mr. NGUYO - Registrar, Egerton College,
Njoro, Kenya

The Egerton College has students on scholarships from the Ministry of Agriculture (Kenya), as well as students from other African countries. Since the students are on scholarships, their training has to be planned to satisfy the requirements of their sponsors.-

The requirements for admission are at least four years of high school. At the end of a three year training period, students are awarded a diploma. The college offers nine diploma courses:

- general agriculture
- animal husbandry
- farm management
- agricultural education
- agricultural engineering
- range management
- dairy technology
- horticulture
- agriculture and home economics.

A tenth diploma course in food technology is to be started soon.

During the first year, students study basic sciences and general agriculture. Specialisation takes place during the second and third year depending on the course.

The post-graduate curriculum does not produce suitable candidates for their teaching staff. It is, therefore, necessary to retrain new staff members (B. Sc.) by giving them field posts for one or two years, after which they may be sent for post-graduate training. Upon completion of the post-graduate training, they are given substantive posts. Due to lack of personnel, it is sometimes necessary to give substantive posts before fulfilling the field-training requirements.

The College training programme is hampered by lack of adequate teaching material.

Staff members of different universities should co-operate in establishing post-graduate programmes.

1.5 Fifth Speaker: Dr. P. HOPCRAFT, Ag Director, Institute for Development Studies, University of Nairobi, Kenya

One of the areas for which it is clearly necessary to train professional agricultural economics manpower is that of research evaluation and policy analysis. In most of our countries there is a chain of consultants and a series of bilateral and multilateral agencies coming and going to work in these areas. On some occasions the reports that they leave are excellent, on other occasions they are not so good. But there is one additional question that must be asked, what do they leave in terms of local capacity to generate a continuing flow of applied and policy oriented analysis.

The Institute for Development Studies is a research institute of the University of Nairobi. The aim of the Institute is to generate local knowledge, but also to institutionalise the capacity to generate such knowledge on a continuous basis. As the development process proceeds, there is no doubt that the need for such a capacity will increase rather than decrease. This local capacity can and should be enhanced from abroad, but this is most efficiently done in the context of the development of local professional and institutional capacity.

The Institute's research programme is developed both in co-operation with the Government and independently by University scholars. In our relationship with Government it has emerged that professional staff who are not operationally involved and are not Government officers have a clear comparative advantage in research and evaluation activities. In the case of the Ministry of Finance and Planning, to cite a few Kenyan examples, the Special Rural Development Programme grew in large measure out of joint University and Government interaction at an Institute conference. The programme itself was funded substantially by external donors and operated by the Government. Two overall evaluations of the programme have now been conducted for the Government by IDS. In the case of the Ministry of Agriculture major studies of particular commodities or problems are requested, and undertaken by IDS. Studies on beans and dairy are recent examples. Further studies have been undertaken on extension, on marketing, on credit, and on many other aspects of rural and agricultural development. In the case of the Ministry of Health, rural health, nutrition and family planning are the topics of Institute research interests relating to major Ministry programmes. Perhaps the majority of research projects are generated within the University, a major study of equity and growth in Kenya is a current example, and a study of industrialization and trade strategy with particular emphasis on employment is another.

In terms of the Institute's staff and professional development programme, Kenyan scholars are encouraged to undertake the research for their Ph.D. dissertations as Junior Research Fellows in the Institute. There are currently eight staff members who are working on dissertations. Non-Kenyan scholars, either at a more senior level or those working on dissertations can also join the Institute as Research Associates or, given funds, as appointees. There is an attempt to maximize the local professional development and institution building spillover from such appointments.

At the substantive level it is appropriate to comment regarding the content of postgraduate training in agricultural economics. There appear to be two illusions, both of which need to be seen as such. The first is that training in theory is all that is required. The consequence is inadequate familiarity with the actual problems that confront the farmer or the policymaker in agriculture. The result tends to be people with a single answer for everything. We have heard all the prescription, "Let the market take care of it," or perhaps the even more simplistic prescription, "Let government take care of it." Both of these prescriptions may be fine as long as they explain why neither the market nor government currently is taking care of it. Agricultural Economics is perhaps the field within economics where it is least realistic to generalize between areas. Local, technical and institutional knowledge is required for any useful analytical or empirical work.

The second illusion is that practice and experience is all that is needed. The result of this kind of training is masses of descriptive work that misses the crucial economic issues altogether. Graduates of such programmes tend to be critically short of generalizable skills. They lack theory and they lack analytical ability. In some cases, through no fault of their own, it would be hard to call such people economists, let alone agricultural economists.

Clearly specificity and local knowledge needs to be built into local agricultural economics graduate programmes, but the tendency appears to be to err in the opposite direction in such programmes in Africa. At the postgraduate, and especially at the Ph.D. level, it is essential that we have people concerned with the agricultural sector who are adequately trained in economics, and who can, in a rigorous fashion, apply economic analysis to the multiple problems of rural and agricultural development.

## V. Objectives for post-graduate training in agricultural economics

**Plenary Session:** **Friday, July 23, 1976**

**Panel Discussion**

Chairman: Dr. I. MAY-PARKER
Prof. L. JOY
Dr. G.O.I. ABALU
Dr. E.ANDAH
Prof. L. MILLER

Rapporteur: Prof. D.A.G. GREEN

Prof. Joy: The development of objectives for postgraduate training in agricultural economics must be based on values. It is important to exclude personal values as far as possible but it is also important to recognize personal values where they exist rather than deceive oneself into the belief of absolute objectivity. Objectives may be defined as generalized long-term statements about the aim of training, in contrast to goals which are specific short-term steps in moving towards general objectives. It is important to be specific about post-graduate training in agricultural economics with respect to both objectives and goals. Examples of the type of generalizations which may provide the objectives for programme development are:

1. To develop advanced training in pursuit of policy formulation to achieve given social objectives,
2. To develop advanced training to meet the demand for marketable skills in agricultural economics,
3. To prepare the necessary cadre of agricultural economists with advanced skills required for policy analysis, policy formulation, and policy implementation.

Clearly, there is some compatability between these generalized objectives and some overlap occurs between each one. With each objective it is also necessary to develop a body of teachers capable of meeting the demands of each objective. By stating the objectives in such a generalized form, it becomes apparent that such maxims as striving to maintain sustained growth, or maximizing GNP, or redistributing the expanding national income are inadequate. Being some of the list of social objectives incorporated into the total development plan of a country, these are merely, part of the socio-political framework in which the agricultural economists finds employment.

Relevance is an important question which must be answered with respect to training in agricultural economics. Are the models relevant to the problem to be solved ? It is also important in defining the problems to distinguish clearly the areas of work. Is the agricultural economist to be trained only to work with and for farmers and farming, or is the rural community which includes many non-farming occupations to be also included in the agricultural economists areas of professional responsibility ?

What is considered relevant is generally biased by personal interests. Moreover, problem definition can be substantially biased by the nature of professional training and the nature of the decision-making institution in which the agricultural economist is employed.

There is obviously no point in providing training for non-existent roles but it is equally important to appreciate the fact that many existing roles are institutionalized in such a way that problem definition and remedy prescription are also formalized. The articulation of observed problems and the formulation of solutions is an important area of training for the agricultural economist. It is also necessary to train the agricultural economist to perceive problems both in terms of the institutionalized role in which he finds employment and in terms of changing the institution so that problems may be attacked by more appropriate means.

Generally valid objectives for postgraduate training in agricultural economics will not be universally acceptable because the socio-political philosophies of countries differ. Certainly, the means by which the objectives are to be attained will vary from country to country. In developing a set of objectives for postgraduate training, the following questions ought to be faced:

1. How far do we consider post-graduate training to include in-service training for specific job skills (2-6 week courses) as well as long courses for M.Sc. and Ph.D. degrees ?
2. How far do we consider upgrading training as part of post-graduate training ?
3. How far should training to the Ph.D. level be divorced from the changes deemed necessary in "lower" levels of post-graduate training ?
4. How do the productivities of M.Sc. and Ph.D. trained individuals compare with the pay-offs from short in-service training courses ?
5. How much do course titles indicate the objectives of courses ?
6. How much do we need to develop abilities in report writing in contrast to theses and dissertations ?
7. How much do we need to relate skills in agricultural economics to other related disciplines ?
8. How much can agricultural economics become problem oriented and not discipline oriented ?

Dr. Abalu: The search for objectives begins as the discipline itself becomes established. Objectives are likely to change with changing conditions. Thus, the search for objectives becomes a continuous process. At present, the discipline appears to have become obsessed with maximization/minimization exercises. Utility has to be maximized and costs minimized after the lines of analysis developed with the marginal analysis revolution. However, the criteria of assessment appear to be peculiar to the countries in which the analitical techniques have been developed. Cultural loyalties and social values are different in different countries and among different societies; (agricultural) economists need to reach a higher plane of [illegible] evaluation. Agricultural economists should apply [illegible] reflect the values of the society in which they are working instead of merely applying techniques learnt in a programme of post-graduate courses elsewhere. In the attempt to transform agriculture, it is of primary importance to establish criteria or appraisal which reflect the utility of the ordinary farmers, the social group which comprises the largest part of the population in developing countries.

Philosophy becomes an essential element of the discussion. Philosophical considerations will guide the development of appropriate evaluation criteria and, hence, the content of postgraduate training programmes in agricultural economics.

Referring to Prof. Joy's remarks: it is important for economists not to look at the economy in a vacuum. Engineers, agronomists, and economists all tend to look at agricultural problems in their own particular way and therefore are all equally guilty of interprating efficiency differently. The particular objective in transforming agriculture is to cater for the needs of the average farmer and his interpretation of efficiency can only be in one way. The acceptance of a philosophy which reflects the values of the farmer can become a guide for the development of a framework of thought which will lead to relevant post-graduate training programmes.

Dr. May-Parker: Evidently from the discussion objectives will change as conditions change. Criteria which guide the development of training programmes must reflect the social philosophy in order to meet national needs.

Dr. Andah: It is important that the discussion refers specifically to African and examples should be drawn from the African situation. Goals (objectives) are established by politicians; agricultural economists are needed by society to help in achieving established goals. Universities are established to meet the needs of society and clearly as agricultural economists have emerged as a relatively new profession, the training of agricultural economists meets a social need. However, areas of professional responsibility are clearly defined and the work of the agricultural economist should not overlap the work of the politician. Goals are established by politicians. The role of the agricultural economist is to economize in the use of resources which are employed to reach the established goals. There are other scientists whose concern lies in other areas of science.

Thus, the objectives of the teaching profession in agricultural economics is quite straight forward. We have a responsibility to teach young professional people to take our place, having trained abilities: (1) to fill administrative posts, (2) to use simple tools of analysis for solving agricultural problems and (3) to analyse policy decisions so that policy makers can get advice. Different training institutions specialize in different aspects of the discipline and it is important to recognize that no single agricultural economist can be an expert in many areas of the discipline. The area of emphasis in curriculum development in agricultural economics at any particular teaching institution will be largely a function of the relevant problems in the particular location.

Dr. May-Parker: Clearly, Dr. Andah sees the politician as the setter of goals and the agricultural economist must limit his professional horizon to work within the boundaries prescribed by these goals. The university has a responsibility to develop the professional services needed by society to solve socio-political and economic problems. Certain universities develop specialized professional skills because of the specialized needs of their location.

Prof. Miller: Obviously, it is important to define what agricultural economists do. Ethical questions tend to be overlooked generally because the professional training of the agricultural economist does not provide the necessary intellectual equipment to cope with these problems. Agricultural economists are professional specialists but it is very important to avoid becoming too narrowly specialized. It is also important, particularly in a discussion of this nature which tends to be rather philosophical, to provide specific and tangible points for consideration. The following is a list of objectives which appear to emerge from the Ibadan postgraduate training programme. The list includes some personal biases.

1. To give students a thorough understanding of basic economic theory and technical skills and experiences in their application to problems in agricultural economics that are relevant for their economy.
2. To train students in defining important economic problems in developing agriculture, in generating the necessary data for analysis, and in applying appropriate research tools to developing solutions to these problems.
3. To develop students ability to communicate their proposals and research results to farmers, businessmen, administrators, and policy makers so that they can be used in making economic decisions.
4. To ensure that students have some understanding and appreciation for other Agricultural and Social Sciences so they can work effectively with other professionals on multidisciplinary problems.

Prof. Joy: The list provided by Miller was good and particularly helpful in focussing the discussion on specific issues. However, the interpretation of the list of objectives, which means the translation of the "objectives" into a programme of courses and spelling out the details of course content, will depend on the answers given to the set of questions at the conclusion of the (my) first contribution. Relevance becomes a serious consideration for each of the objectives listed and objective 2 does not really face the question of defining what is relevant since it is written from a position within the discipline, in contrast to what society may define as relevant. There is always the danger of "sticking to our own last" and thereby failing as a profession to see problems in the context of society. The subject matter of our training programmes must be addressed to the needs of society which we serve as a profession. Agricultural economists have a moral obligation to serve society and, therefore, part of professional responsibility is to examine critically the goodness of policy decision making. Essentially, the agricultural economist is a technocrat but the relationship of the technocrat to the community which be serves is determined partly by the philosophy of the country and partly by relevance of the technocrats training to solving problems considered by his profession and by society to be legitimate areas of professional (technocratic) concern.

Dr. Abalu: An agricultural economist's activities must be guided by social philosophy. In northern Nigeria sole cropping has been advocated for more than 20 years. Only recently has research effort been changed to cater for the needs of improving mixed cropping systems. The local problem has now been recast in terms of local needs.

Dr. Andah: The importance of specialization must be recognized so that economists do not encroach on other areas of specialization for which the economist has no relevant training. Production economists are unlikely to be good at extension. Advances in production economics must be communicated to the extension specialist (trained appropriately) in order to be adopted successfully by local farmers.

## General Discussion:

Distinguishing between the task of the university and the task of professional training is important. Ability in scholarship is essential to any university trained specialist at postgraduate level and the ethics of university training should cater for the development of ethical values. In Africa, today needs are changing and the agricultural economy is lagging in meeting the needs of changing Africa. Policy making and economic analysis go along together and the objectives of training in agricultural economics should not change with changing needs provided the objectives are defined with sufficient breadth to include the social demands resulting from changing needs. The agricultural economist must find ways of transforming the structure of African agriculture to meet the changing needs of African society, (Anthonio).

There are large numbers of individuals having specialized skills in particular fields of agricultural economics at any given time. However, since the objectives of postgraduate training in agricultural economics may change with changing needs, it is important to rank the level of importance of different objectives so that those objectives which are less inclined to change through time take on a greater level of significance in influencing the nature of professional training in agricultural economics, (Kimani).

In some ways professional training to higher levels increases the professional ability to tackle problems at the "grassroots" level of agriculture. The contents of syllabi and techniques of analysis must be related to social needs. Social philosophy must therefore be appreciated in developing the training of agricultural economists, (Berthelot).

When objectives are defined, there is a tendency to omit the student. Objectives must incorporate the student, the teacher and the employer. This relationship between these three groups of individuals and the forces influencing the setting of appropriate objectives are illustrated in Figure 1.

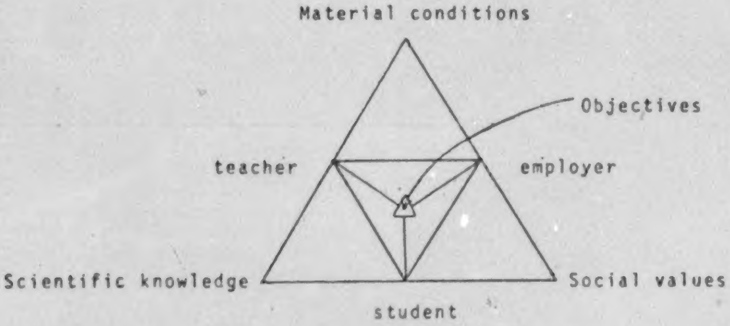

Figure 1: Interrelationships involved between teacher, employer, and student as well as with scientific knowledge, material conditions, and social values in the establishment of objectives for postgraduate training in agricultural economics and in education in general.

So far in the discussion, cognitive objectives have been discussed widely but affective objectives (concerning attitudes, motivation, values, interests, feelings) have been largely neglected as have the psycho-motor reactions (concerning physical abilities and aptitude). A taxonomy of objectives is necessary to guide teaching, beginning first with the more general objectives, (Glimm).

There is an obvious need to question the underlying philosophy of economic science and advanced students in agricultural economics ought to be equipped to examine critically their own discipline. Turning to another aspect of discussion, Prof. Miller's list of objectives to curriculum development was particularly helpful in providing the academic administrator with practical guidelines for training programme development. Finally, the university does not generally offer awards for communication with farmers and administrators. There are important areas of activity in the "search for relevance" and some merit for promotion ought to be attached to these "low-level" achievements, (Dadson).

Politicians may not be the best group of individuals in society to make (social) goals. If goal making is left to politicians, economists and society generally may be completely misled in the long run. Politicians come and go; one government is displaced, or replaced, by another. As economists, the profession ought to develop clearly defined objectives for its own professional development, (Okai). The discussion continued to contrast the positivistic position of non-involvement in objective formulation in contrast to the non-positivistic position as some economists become involved in selecting alternative courses for government policy and therefore become involved in selecting among sets of alternative objectives.

Another question was raised on the extent to which universities should be concerned about the pursuit of scholarship. Generally, institutional development in any country lags substantially behind the training levels of individuals occupying roles within the institutional framework. The pursuit of scholarship appears to imply postgraduate training to degree level (M.Sc. and Ph.D.). However, all resources are scarce and in every developing country there is a critical scarcity of trained manpower which can contribute to improving agricultural productivity. The urgency of the situation demands rapid availability of trained manpower. Short-term sub-degree courses are quite adequate in many situations to provide needed skilled manpower to work closely with farmers. Another critical problem which raises the question of the relevance of post-graduate degree training is the research situation created by training for higher degrees. The farmer becomes a source of information when the urgent need is to work with farmers and communicate with them in intelligible terms. Thus the question of relevance of training programmes is crucial and the question must be couched in terms of the aspirations of the government as well as those of the student. Two sets of people (students) must be catered for, the (higher) degree student, and the sub-degree student. The funds to train both types of individuals come from the same source but the types of training programmes generally tend to favour the man with the higher degree when promotion is considered. Often, it is the man with sub-degree training who has the relevant equipment to solve "grass-root" problems, (Bunyasi).

The training of agricultural economist needs to be related to manpower development plans. Usually, the estimated manpower requirements fail to give guidelines of economists required. In Tanzania, manpower plans specify the number of trained men required with agricultural degrees and a certain percentage of these are specified as agricultural economists, (Odero-Ogwel).

However, the development of plans and formal training programmes all take too long. Situations are dynamic and while long-term objectives may be recognized, the economist also has a role, as a citizen, to make enlightened comment to guide short-term actions. There is an urgent call for action for economists to play a responsible role in the immediate current affairs of the nation, (Nguyo).

Regarding the call for sub-degree training for specific skills, there is still a scarcity of professionally trained agricultural economists. Until this scarcity has been met, it is unrealistic to place much emphasis on sub-professional training at the post-graduate level, (Anthonio).

The present educational systems in Africa, being introduced by former colonial regimes, caused a mentality of striving for white-collar jobs. It is very difficult to develop attitudes of problem solving at the level of the farm where the traditional attitudes of the educated are to move far away from farm work, (Ngombo).

The idea that objectives for post-graduate training should be derived from the tasks agricultural economists have to perform, takes into account the interests of their society and their direct employers. There is a danger in relating teaching to jobs too narrowly. The jobs of today may not be the jobs of tomorrow.

Therefore, emphasis should be laid on developing the sense for thinking and a problem-solving attitude, which may enable the student to be flexible in his future task.

From this point of view, what is taught is not so important as how it is taught.

Experience shows that employers themselves are often not able to formulate their requirements.

## Concluding observations

Prof. Joy: The discussion ranged widely but it has been invaluable because it has increased our sensitivity to a new set of concerns which we may never have considered before as legitimate areas of professional inquiry. The adaptive control point made by Mr. Nguyo is an important one: that we must start tackling any problem from the point in which we find ourselves. The following points appear to have emerged in the discussion.

1. Agricultural economics influence policy decisions either explicitly or implicitly, whether we are aware of it or not.

2. Agricultural economists cannot live two lives: our values are not divorced from our teaching. It is therefore needed to recognize that the value systems of different countries are relevant to the content of postgraduate training programmes.
3. The way a programme of training is made operational will influence strongly who receives the rewards, i.e., programmes are operationally specific.
4. The problem of the average: for whom are development programmes in which agricultural economists find themselves involved to be developed ? -- the individual, the group, the average, the most deprived, etc. ?

**Dr. Abalu:** The agricultural economist fulfils two primary roles (but most only see the first role):(1) as technicians with a set of analytical tools to be applied in problematic situations; (2) as advocates because the agricultural economist knows he is knowledgeable about socio-economic problems. In this second role, the agricultural economist can take an active role in the pursuit of an ideology consistent with the life style of his own country. The objective of any country is to be economically and academically independent, leading to the enjoyment of available resources. This is a reasonable set of objectives to guide the development of objectives for academic training.

**Dr. Andah:** Postgraduates are trained to do specific and definable jobs: (1) to educate, (2) to administrate, (3) to research, (4) to farm (probably not relevant at this point in African development), (5) to be politicians. The major issue is to determine the corps of professional knowledge relevant to these five categories of work.

**Prof. Miller:** The definition of objectives is only a meagre beginning to establishing what to teach. It is necessary to decide what to put in the course content and how to teach the subject matter. It is important to start in the given situation at the point that we find ourselves. It is essential to communicate with each other at the professional level, and also to communicate with students and professionals in other disciplines.

We need to develop a systematic approach to objectives and the content of professional training within each department of agricultural economics. "It is a great field which has taken a long time to come of age but is now recognized as an important area combining biological sciences and economics".

**Dr. May-Parker:** Expressed thanks to all the participants in the discussion.

The panel subsequently met in a closed session to work out a guide to the development of objectives which can be used by Departments whenever the need for their discussion comes up. The guide is presented as follows: 1)

**Definition:**

1. Objectives: Generalized statements of long-term aims.
2. Goals: Short-term incremental steps which serve as means in moving towards objectives.

Thus, it is necessary to define objectives and translate them into goals appropriate to specific times and situations.

**Classification:**

Three different levels of objectives have been identified

1. Objectives of post-graduate training:

   To train
   a. educators
   b. administrators
   c. researchers
   d. farmers (not contemporarily appropriate to Africa)
   e. politicians

2. Objectives of the training programmes:

   a. To give a thorough understanding of basic economic theory and technical skills and experience in their application to problems that are relevant to their own agricultural economy.

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1) see also page 67 et sequ.

b. To train in defining important economic problems in developing agriculture, in generating necessary data for analysis and in the application of appropriate research methodology to obtain solution to these problems.

c. To develop the ability to communicate both research proposals and results to farmers, businessmen, administrators, and policy makers to facilitate decision making.

d. To ensure an understanding and application for other agricultural and social sciences to facilitate effective professional co-operation on multi-disciplinary problems.

3. Social objectives of countries which agricultural economists will be required to pursue, contained in the ethos of government in which many agricultural economists will find employment. The list of specific objectives varies according to political philosophy.

Acceptability

1. At the international level only generalized objectives can be handled.
2. Goals are influenced by socio-political objectives within each country.
3. Personal values cannot be overlooked, and it is necessary to recognize their existence.

Particular issues

1. Agricultural economists are not trained in order to make decisions about objectives because politicians do this, but they are sometimes called to participate in decisions about goals because some agricultural economists become involved in politics as members of their society.
2. Problem definition can be greatly improved by professional training, but can also be greatly hampered by professional training, if not properly integrated into the whole development process.
3. Judgement criteria have been accepted by the profession without questioning the imported moral philosophy of their origin.

4. Agricultural economists have a moral obligation to address themselves to problems of their own socio-economic complex.
5. Professional training encourages problem definition in already established conceptualizations which may be irrelevant to new emergent problems. This gives rise to inappropriate solutions.
6. Professional irrelevancy may be perpetuated by the institutional infrastructure of socio-political decision making. In our concern to improve decision making we should be concerned to improve the structure and process of decision making and not simply to train people to fulfil existing professional roles.

The following list are comments on objectives of post-graduate training in agricultural economics emerging from the discussion.

a) - improving GNP; maintaining sustained economic growth; improving income distribution. These were generally considered inadequate to guide professional training.

b) - objectives need to distinguish between training to help the rural producer (the farmer) and the more general objectives of developing the rural economy which includes many non-agricultural activities and individuals.

c) - objectives must recognize the difference in training required for tackling the problems of "the average", the mass, the progressive farmers, and the extreme situations of the poorest farmers; and the training required for the rural community as a whole.

d) - a number of alternative generalizations were suggested

. training to facilitate policy formulation in order to reach social goals,

. training to provide an individual with a set of marketable skills,

. training to enable an individual to analyse and implement (and formulate) policy.

e) - techniques of training must reflect social values wherein they are to be applied and consciously prepare for appropriate professional roles in relation to others.

f) - need to distinguish between university objectives and objectives specific to the agricultural economists profession.

g) - the economist must appreciate the effect that different social systems will have on his analysis and therefore on his solutions to the problems.

h) - despite differing social systems there is a common body of knowledge to be learned.

i) - aspiration of both students and governments must be considered and the effects of reward systems for teachers in biasing their interests, approaches, and work patterns.

j) - effective contribution that agricultural economists make to problem solving must be known. What is the contribution of agricultural economists and how do they compare with other professions in solving problems ?

k) - the design of training programmes in agricultural economics should be relevant and appropriate to the total manpower needs of a country. The design has therefore to be different from overseas training models.

l) - each department needs to develop objectives within its country through internal dialogue and, especially, in the preparation of explicit statements of the objectives of courses and course components.

## VI. Academic aspects of training programmes

Plenary Session: Wednesday, July 28, 1976

Chairman: Dr. EL HADARI

### 1.0 Teaching and coursework

This plenary session was mainly concerned to list and to discuss the problem areas which restrict an optimal teaching performance in training programmes. The session started with the presentation of Working Papers WP 8 (El Hadari) and WP 5 (Tollens). The following major points of interest emerged from the discussion:

### 1.1 Teaching load and teaching efficiency

#### A. Teaching load

(a) There is lack of experienced staff to support an effective post-graduate programme, lack of staff leads to heavy teaching loads, heavy teaching loads force staff to concentrate on lecturing, thus neglecting both research and tutorial work which are necessary for an efficient teaching programme,

(b) A heavy teaching load makes it difficult for staff to carry out effective examinations and grading of the students. With large numbers of students, even the use of oral examinations becomes cumbersome. Students rely heavily on teachers' notes. This does not allow students to develop their own skills for research,

(c) A staff development programme and both monetary and environment incentives need to be established to encourage experienced teaching staff,

(d) Teaching load may be lessened by having other departments or institutions provide service courses. Drawbacks associated with service courses, such as incorrect orientation, inability to follow classes, adequately etc., should not be overlooked,

(e) Interdepartmental coordination and cooperation may also reduce congestion of teaching programmes in one department. Some departments within the University system can be requested to offer courses such as statistics, economic theory etc. which the Department of Agricultural Economics may not be able to offer due to shortage of staff,

(f) The formal establishment of post-graduate programmes has to be postponed until adequate staff is available. An alternative would be to establish cooperative as well as exchange arrangements with other universities.

## B. Teaching efficiency

(a) If a post-graduate programme is to be successful, a good library system must be available. Very often, this is not the case in African universities. Journal acquisition as well as obtaining relevant books usually involves lenghty negotiations and insurmountable bottlenecks. Donor agéncies could provide important help by assisting departments to obtain books and journals or by donating them outright to the departments or universities,

(b) Use of local material has to be encouraged in libraries. Exchanging of library materials with other universities should also be furthered. The availability of equipment for replicating materials is also of importance,

(c) Availability of teaching materials and duplicating may ease the problems of books, by enabling staff to duplicate some texts for student use,

(d) Teaching material as well as teaching methods should be fit to stimulate a problem solving attitude. Workshops and seminars may be useful instruments to achieve this goal,

(e) It is very important that the teaching programmes of a department be backed by adequate research programmes. This not only makes for relevant teaching but also allows the teaching staff to maintain their teaching competence and self-improvement becomes automatic,

(f) Due to the lack of evaluation of the teaching effectiveness, weaknesses within the department may not be revealed. The examinations, both written and oral, do not appear to be an effective tool for evaluating a teaching programme. Some participants felt that an external examiner or an independent body could be used to evaluate students' performance,

(g) The inherited examination system which many departments are faced with encourages absenteeism of students. A seminar teaching system as well as programmed methods of teaching are two options that could be explored to improve teaching efficiency,

Alternative course evaluation methods should be investigated. Course evaluation is very important in assessing teaching efficiency as well as the extent to which course objectives are achieved,

(h) Flexibility is not only required for students but also for teachers: updating of teachers should be allowed for,

(i) A post-graduate course should be started only after the ground work has been carried out on staffing, teaching facilities and a compatible curriculum,

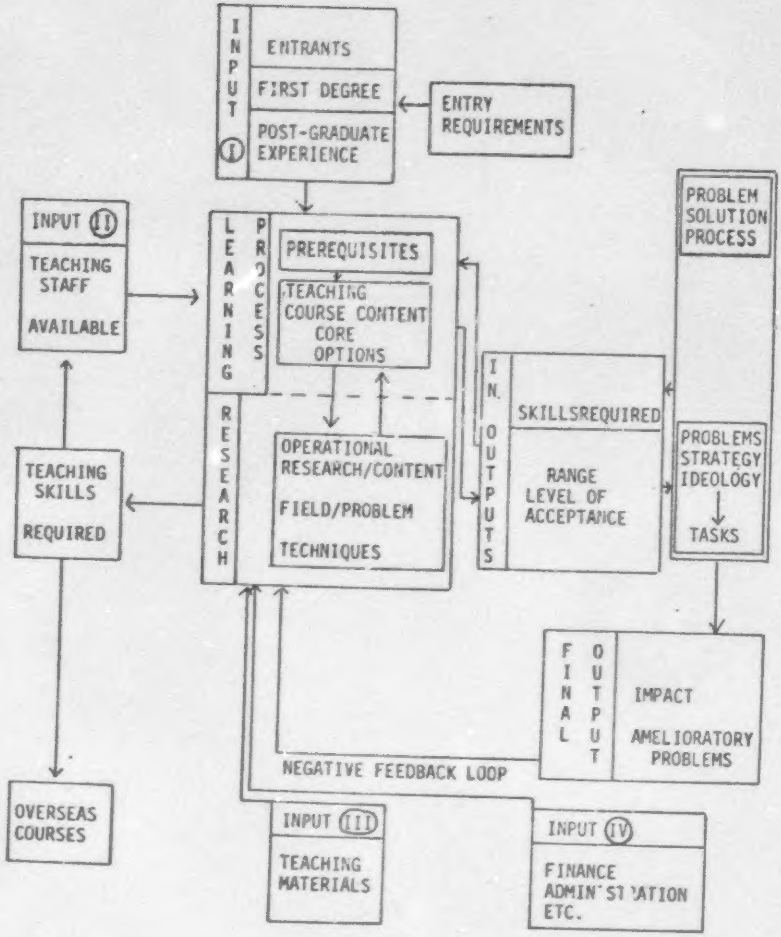
(j) Students should be admitted to post-graduate studies on the strength of available staff to carry out effective work. This should be explained to both sponsors and governments who may wish to push large numbers of students into post-graduate studies when both teaching facilities and staff are not available,

(k) An exchange programme with other universities may bring about cross-fertilization of information thus improving the chances of getting some journals in case of financial problems,

(l) Research work needs to be established to provide information for teaching purposes as well as providing a basis for student experience on a post-graduate level.

## 1.2 A Systems Model of Training in Applied Problem Solving Skills

by Prof. D.C.R. Belshaw


INPUT (I)
ENTRANTS
FIRST DEGREE
POST-GRADUATE EXPERIENCE
ENTRY REQUIREMENTS
INPUT (II)
TEACHING STAFF
AVAILABLE
LEARNING
PROCESS
PREREQUISITES
TEACHING COURSE CONTENT
CORE
OPTIONS
RESEARCH
OPERATIONAL RESEARCH/CONTENT
FIELD/PROBLEM
TECHNIQUES
TEACHING SKILLS
REQUIRED
IN. OUTPUTS
SKILLSREQUIRED
RANGE LEVEL OF ACCEPTANCE
PROBLEM SOLUTION PROCESS
PROBLEMS STRATEGY IDEOLOGY
TASKS
FINAL OUTPUT
IMPACT
AMELIORATORY PROBLEMS
NEGATIVE FEEDBACK LOOP
OVERSEAS COURSES
INPUT (III)
TEACHING MATERIALS
INPUT (IV)
FINANCE
ADMINISTRATION
ETC.

## 1.3 Course Objectives and Course Contents

Plenary Session: Wednesday, July 28, 1976

Chairman: Dr. E. ANDAH

Objectives of courses can be classified as follows:

1. General objectives
2. Course material
3. The social objectives of the country which form a framework
4. Personal values.

Issues or controversies about courses to be discussed were specified as follows:

1. Training for decision making
2. Definition of problems
3. The relevance of imported judgement criteria
4. Objection to address problems of surroundings
5. Problem definition as a function of training
6. The institutional framework as it determines the form of decision making and changes in this framework.

The Nairobi programme presently aims at training Kenyans to be competent in Agricultural Marketing. It was estimated that the incremental cost of a Masters option could be reckoned in the time staff members spend for it. Currently 50 % (400 hours) of the programme was coursework. 600 hours was thought to be necessary but this would reduce by half the time allowed for research. At present the practical work was undertaken too late in the programme. (Weber)

There was a feeling that the staff burden was not necessarily as great as Dr. Weber had suggested. One had to work within one's constraints. 1 - 2 people could support an option. In practice it might be necessary however to spend one year ensuring that students could meet course prerequisites. Dr. Anthonio felt that there would be general agreement on what constituted core teaching. He was averse to inclusion of esoteric items in the basic course work and in research.Although he recognised that students wanted to undertake esoteric research topics to support promotion claims). In research it was important to encourage for the validity of the data and the realism and sense of research findings but in practice there was little incentive for this.

It was observed that there is a trend to mathematical theses using secondary data. Supervision was often inadequate and the content and practice of training was less adequate even than it appeared from a review of course contents. (Adegboye)

DISCUSSION: Questions were raised about why course outlines had been formulated the way they had. Why, for example, did the Nairobi marketing course not cover institutions, (e.g. co-ops.), accountancy or sociology ? In reply, it appeared that these annotations were regarded as weaknesses inevitable with limited staff.

One speaker argued that there was an unavoidable difference between the ideal course and that which could in practice be offered. Is there a point in designing ideal courses? We need practical courses to assist structural transformation. We should determine what are the minimum requirements to satisfy masters level training.

The course outline presented by Dr. Anthonio (see pp.37 f.) was discussed and there were questions raised about which courses should be compulsory and which optional (should Project Formulation and Evaluation be compulsory ? Should Accounting be compulsory ?) But it was asserted that the outline would be unacceptable in Tanzania. Following this intervention the earlier proposition that we had to design courses to meet constraints was challenged - first we had to define our need. This raised again the earlier discussion: was there an invariable core of teaching appropriate for all Masters' Agricultural Economics Programmes ? Could social objectives be added or would these govern the overall structure and content ?

It was asserted that we could not appraise courses except by asking what they were intended to achieve and the answer "trained agricultural economists" did not face the question "trained for what ?".

It was noted that course outlines had broadly similar appearance and only marginal differences. Only when we discussed depth and treatment were differences revealed.

In the end the key issues seemed to be "was it satisfactory to aim for courses which taught students the content of western agricultural economics literature ? How far and in what ways did courses need to be 'Africanized' ? Did different countries have different needs ?"

## 1.4 Course Objectives and Course Planning

Speaker: Prof. D.A.G. Grenn

### Introduction:

The emphasis on either liberal education or vocational training is currently changing. Therefore, if agricultural economics is what agricultural economists do then we must look at

a. what agricultural economists do, and
b. what they ought to be doing.

Also we must recognize that what agricultural economists do will change through time so that we must offer a training which:

a. enables the individual to fill a prescribed role and
b. enables the individual to exercise perception skills which through time can be exercised to
  - modify the role he performs and
  - modify the institutional framework so that the professional role may be changed to meet changing circumstances.

### Major considerations in vocational training:

a. the interest of society
   Social utility function

b. the interests of individual student
  - individual utility function
  - professional and personal satisfaction
  - to train latent skills
  - to be employable
  - to satisfy (future) employers

- to understand and work toward (usually) socio-economic goals of the country

c. the interests of individual teacher
  - individual utility function
  - professional and personal satisfaction
  - to earn a living
  - to serve society by training professionals in relevant skills
  - to obtain promotion

Major issues:

A. How do we go about defining objectives ? These include objectives ranging from job themes to course requirements.

B. What value do the objectives have ?

Ad A. There are two possible approaches in defining objectives:
  - What economists do or are expected to do
  - What economists ought to do

a. Define job themes (using the two approaches)
b. Spell out the detailed content of these job themes
c. Spell out in detail the skills necessary to perform the job themes.
d. Objectives of post-graduate training begin to emerge at this point.

Ad B. The value of the objectives:
a. The objectives indicate the depth at which technical training may be necessary
b. Define the course content
c. Define the basic courses
d. Define specialist skills (i.e. depth of skills necessary).

Conclusion:

The above methodology leads to a fairly broad selection of basic courses.

A few specialized courses may be included to present scope for short, intensive courses in a particular technique. Such courses are mounted by the university or by other institutions (e.g. the Planning Section of the Ministry of Agriculture).

Thus the M.Sc. may cover a wide range of subjects at a medium level of competence and a few technical skills at depth which may be changed though time by additional short courses.

Plenary Session: Friday, July 30, 1976

Chairman: Prof. R. O. ADEGBOYE

Report of the subcommittee, rapporteurs: Prof. D. A. GREEN
(includes Tables I to VI) Prof. L. JOY

## Purpose of the Subcommittee:

Introducing the report, Prof. Green outlined the purposes of the subcommittee as follows:

- to identify possible objectives for post-graduate training programmes in agricultural economics,
- to define the possible role of an agricultural economist in the society and
- to determine the institutions needed to foster the training of agricultural economists.

Prof. Green noted that, in defining training objectives for post-graduate training programmes in agricultural economics, it is necessary to base these on:

- the needs of society
- the needs and interests of agricultural economics teachers and
- the needs and interests of the students concerned.

Approaches to planning training programmes:

According to the subcommittee, there seem to be two approaches to planning post-graduate programmes in agricultural economics:

1. The first approach is to start by setting objectives for post-graduate programmes. Having defined these objectives, the type and depth of the necessary training can then be planned.
2. The second approach is to begin by identifying social needs that can be met by agricultural economists. After determining these needs, possible job areas (themes) that agricultural economists can undertake, are identified. On the basis of these themes, training objectives and content can be defined. The cubcommittee prefered the second approach and gave the following two procedural examples.

Example I: (Prof. Dr. GREEN)

a. Define the job themes (areas) of an agricultural economist.

b. Define the contents of the job themes

c. Define training objectives on the basic of b. above

d. Define the training contents on the basic of c. above

e. Define the kinds and depth of skills for which training is required.

f. Identify a set of possible courses for the training programme. This may give vice to a range of training areas as:
   - history and theories of economic development,
   - research methods in social sciences,
   - sources of technical data (their collection, analysis, and use),
   - statistics,
   - rural sociology,
   - price policy,
   - production economics and farm management,
   - communication and
   - principles of administration.

Following the identification of possible training areas, we can then define:

1. The kinds of skills required of agricultural economists,
2. the depth of such skills and
3. the course content required for training for these skills.

Example II: (Prof. JOY)

According to Prof. Joy, the following procedure might be adopted in planning a post-graduate training programme:

1. Identify possible tasks of an agricultural economist
2. Rank of priority training areas
3. Define core subject areas

ad 1.: Tasks of an agricultural economist:

The tasks an agricultural economist might be called upon to undertake may include:

- project planning
- sectoral planning
- farm analysis
- institution management
- commodity analysis
- price analysis.

Each of these tasks may be broken down into several subtasks. For example, the following subtasks may fall under farm analysis:

- analysis of farming systems
- management of a given farm
- analysing and forecasting farm systems
- analysing private and public needs for rural community development
- analysis of extension programmes
- project analysis and planning and
- educating trainers for these tasks.

ad 2.: Priority training areas:

Having identified the tasks an agricultural economist might be required to perform, it then becomes possible to determine the areas in which training is required. Certain of these areas will have to be given priority in the training programmes. Such priorities should be determined on the basis of:

- alternatives in the order of pay-offs
- fields which call for improvement
- availability of needed resources.

ad 3.: Core subject areas:

According to Prof. Joy, from the set training priorities, core subject areas can be identified. He gave the following procedure for determining the core subject areas:

a. define core subject
b. define kind and level of standard a graduate may be required to obtain
c. define the sequence of core subject components
d. define the methods of presentation of the teaching material (lectures, seminars, lab practicals, field work, etc.)
e. identify possible constraints on envisaged courses
f. constant revision of core subjects in accordance with current conditions and, hence, new objectives.

Discussion:

Several viewpoints were expressed:

Course objectives:

- It was almost unanimously felt that it was difficult to define a set of objectives for post-graduate training programmes in agricultural economics (for the whole of Africa), as conditions and, hence, needs differ from country to country.

- There was a general consensus that it is imperative to give due consideration to the background requirements for post-graduate training in agricultural economics. These include the following:

- the attainment of a certain academic level in agricultural economics and
- remedial training in subjects in which the candidate has not reached the required level.

Course content:

Participants had varied views on the subject of core course content for post-graduate training programmes. These various opinions did, however, crystalise into two sets of views:

- That post-graduate training programmes in agricultural economics in Africa should emphasise academic content (which is necessary for the development of thought processes in the student).
- That such programmes should largely aim at training agricultural economists for specific skills.

The following Tables I - VI were presented by Prof. Joy to indicate the relationships between job tasks and the relevant skills or knowledge required. They are self-explanatory.

Table I A.: Job Theme: Project Planning

| Task | Relevant skills or knowledge | Content of most M.Sc.courses | | | Role in which skills are relevant | | | |
|---|---|---|---|---|---|---|---|---|
| | | Existent | non existent | provision, if non-existent | education | administration | research | farm-management |
| 1. Project identification | economic Philosophy | | | | | | | |
| | - ordering social priorities | | x | no provision | / | / | / | |
| | - philosophy of country (social welfare needs) | | x | " | / | | | |
| | - welfare economics | | x | " | / | / | | |
| 2. Project design | sources of technical data | | | assumed | | / | / | / |
| 3. Analysis | - simulation - budget etc. production theory | / | | | | | | |
| | - farm management analys. | / | | | / | / | / | / |
| 4. Appraisal<br>- development of decision criteria<br>- BCA | market analysis | | | | | | | |
| | - political philosophy | | x | | | | | |
| | - history of econ.thought | | x | | | | | |
| | project appraisal techniques | / | | | / | / | | / |
| 5. Accept/reject at planning department level | decision making | / | | | | | | |
| 6. Communications<br>- to civil service<br>- to donor agents | communication | | x | | / | / | / | / |
| 7. Administration (understand problems, if not administer) | principles of administration | | x | 6 month course | | / | | |

Table I. B.: Relevant Courses to Table I. A.:

| Relevant Courses | Objectives |
|---|---|
| 1. Economic Philosophy History of economic thought | - to teach about the socio-economic ethics in which problems emerged in the past, relevant theory and solutions, emergence of choice criteria |
| 2. Sources of Information | - to train in obtaining relevant information and testing reliability |
| 3. Production Theory and Farm Management | - to train in the development of relevant production systems, their simulation and analysis |
| 4. Market Analysis and Appraisal - Price Theory and Statistical Analysis | - to determine, analyse and appraise markets for products to be developed |
| 5. Project Appraisal | - to train in the understanding of the currently available techniques to a sufficient level to understand their relevance and the nature of choice criteria |
| 6. Decision Making | - rudimentary practical decision-making to analyse the consequences of accepting or rejecting a project (not decision theory, which is usually given) |
| 7. Communications | - to train to an acceptable level of competence in written and oral communication, these in the internal civil service who need to be informed about the projects<br>- to prepare reports to donor agents for funding |
| 8. Principles of Administration | |

Table II A: Job Theme: Sectoral Planning

| Task | Relevant skills or knowledge | Content of most M.Sc.courses | | | Role in which skills are relevant | | | |
|---|---|---|---|---|---|---|---|---|
| | | existent | non existent | provision, if non-existent | education | administration | research | farm-management |
| 1. Agricultural sector analysis<br>-identification of resourses<br>-present performance of production systems | production theory analysis | / | | | / | / | / | / |
| present performance of market systems | market analysis | / | | | / | / | / | / |
| -potential future performance of production systems and market systems | production and market theory | / | | | / | / | / | ? |
| | projections and forecasting | / | | | / | / | / | ? |
| 2. relationship between agr. sector and rest of the economy | Macro production analysis<br>rudimentary input-output analysis | sometimes | | short course | / | ? | / | ? |
| 3. Sources of technical data | | / | | | | | | |
| 4. Simulation of interregional models | production analysis | | / | | | / | / | / |
| 5. Evaluation and appraisals<br>-judgement criteria<br>-social issues<br>-moral welfare, etc. | project appraisal<br>econ. philosophy<br>history of econ.thought<br>sociology | | | Service courses | / | | | |
| 6. Communications | as table I A | | / | | / | / | | |
| 7. Administration | as table I A | | / | | | / | | |

Table II B.: Relevant Courses to table II A.

| Relevant Courses | Objectives |
|---|---|
| 1. Production Theory and Farm Management | - to identify available resources<br>- to appraise present performance of the productive system |
| 2. Market analysis: Management | - to assess present market performance and future potential<br>- to understand the requirements in managing new markets |
| 3. Statistics: regressional (for projections and forecasting), data collection | - to identify and gather relevant data: sampling etc.<br>- to obtain accurate estimates of relevant production and market concepts |
| 4. Relevant macro-economic models (e.g. input-output) | - to assess the interrelationship between different sectors of the economy |
| 5. Economic philosophy History of economic thought | - see table I. B. |
| 6. Appraisal techniques | - see table I. B. |
| 7. Introduction to rural sociology | - to understand the ethics and interrelationship of the status quo<br>- to understand the sociological problems created by technical change |
| 8. Communications | - see table I. B. |
| 9. Principles of administration | |

Table III A.: Job Theme Farm Analysis

| Task | Relevant skills or knowledge |
|---|---|
| 1. Production analysis<br>- to analyse the technical interrelationships between inputs and outputs of farm cases<br>- to analyse potential performance | - Micro-production theory<br>- farm management analysis<br>- accumulation (budgetary) |
| 2. Target analysis<br>- analysis of present markets<br>- forecasting future markets | - price information and market management |
| 3. Obtaining relevant information (technical) | - survey techniques and simulation of model farms |
| 4. Communications<br>- to farmers (extension advice)<br>- to ministry: production performance of farm sets | |
| 5. Principles of administration | |

Table III B.: Relevant Courses to table III A.

| Relevant Courses | Objectives |
|---|---|
| 1. Production Theory and farm management | see table I. B. and II. E. |
| 2. Market analysis | see table I. B. |
| 3. Communications | see table I. B. |
| 4. Administration | |

Table IV A.: Job Theme: Institution Management
(Financial Organisations and Co-operatives)

| Task | Relevant skills or knowledge |
|---|---|
| 1. Financial accounting | - accounts and record keeping |
| 2. Project design appraisal | - development of choice criteria<br>- economic philosophy |
| 3. Acceptance/rejections<br>- decision making | - farm analysis<br>- project appraisal<br>- decision theory |
| 4. Source of technical data | |
| 5. Management supervision and advice | |
| 6. Sociology of co-operative organisation | |
| 7. Communications | |
| 8. Administration principles | |

Table IV B.: Relevant courses to table IV. A.

| Relevant Courses | Objectives |
|---|---|
| 1. Accounts and records | |
| 2. Economic philosophy and history of economic thought | see table I. B. |
| 3. Production theory/Farm management analysis | see tables I. B. and II. B. |
| 4. Project identification/development/appraisal | see table I. B. |
| 5. Rural sociology | see table II. B. |
| 6. Administration and communications | see table I. B |

Table V. A.: Job Theme: Commodity Analysis

| Task | Relevant skills or knowledge |
|---|---|
| 1. Price analysis<br>- supply and demand forecasting | - price analysis<br>- market analysis |
| 2. Data collection, analysis and forecasting | - statistics<br>- research methods |
| 3. Assessment of market efficiency | - market organisation and management |
| 4. Communications | - communications |
| 5. Administration | - principles of administration |

Table V. B.: Relevant courses to table V. A.

| Relevant courses | Objectives |
|---|---|
| 1. Price analysis:<br>- theory of supply<br>- theory of demand | see table I. B. |
| 2. Research methods in sociology | see tables I. B. and II. B. |
| 3. Statistics | see tables I. B. and II. B. |
| 4. Market organisation management | see tables I. B. and II. B. |
| 5. Communications and administration | see table I. B. |

Table VI. A.: Job Theme: Price Policy

| Task | Relevant skills or knowledge |
|---|---|
| 1. Recording commodity price movements<br>- world prices<br>- internal prices<br>- other countries prices | - economic philosophy of government<br>- history of economic thought<br>- research methods<br>- statistics |
| 2. Supply and demand analysis | - price theory, supply and demand analysis |
| 3. Analysis of effects of price shifts on<br>- supply of commodities<br>- demand of commodities | - market organisation |
| 4. Effect of prices on imports and exports | - international trade |
| 5. Price in relation to balance of payments/ foreign exchange earning capacity etc. | |

Table VI. B.: Relevant Courses to table VI. A.

| Relevant Courses | Objectives |
|---|---|
| 1. Research methods and statistics | see tables I. B. and II. B. |
| 2. Economic philosophy, history of economic thought | see table I. B. |
| 3. Price theory | see table I. B. |
| 4. Market organisation | see tables I. B. and II. B. |
| 5. International trade | |

## 2.0 Research and fieldwork

Plenary Session: Friday, July 30, 1976

Chairman: Prof. R. O. ADEGBOYE

### Objectives:

Dr. Dadson outlined the objectives of post-graduate research programmes as follows:

1. to enable the student to identify research problems
2. to analyse the problems and
3. to write a report on the results obtained.

### Choice of research topic and its content:

The main task of deciding on a research project rests on the students. In choosing a research topic the student receives necessary guidance from staff as well as his colleagues. A student is normally required to select a research project from a list of topics suggested by a government department.

Dr. Dadson pointed out that it was more appropriate to train post-graduates locally. This proves to be cheaper than training them abroad and makes research done by students more relevant to the local situation.

Local training encourages students to collect primary data that may contribute to the solution of local problems. It also makes the students more aware of local problems and adds to the stock of available information on the local situation.

With reference to agricultural economics research at Bunda College of Agriculture at the University of Malawi, Prof. Green pointed out that:

1. there is a need for post-graduate research personnel,
2. university research programmes in general differ in quality from government research programmes,
3. in comparison to government research programmes the university research programmes are relatively new,

4. relationships between University and government personnel are, on the whole, improving, and

5. research at Bunda College is nourished from the following sources: expatriate staff (also from interchange of staff between Bunda College and the University College of Wales) University of Malawi research fellowships and, to some degree, from undergraduate degree projects.

Speaking on the post-graduate research programme in agricultural economics at the University of Ibadan, Prof. Anthonio pointed out that:

1. the Department of Agricultural Economics has embarked upon and carried out comprehensive research programmes,

2. at the initial stages, theses programmes were financed by the Rockefeller Foundation and

3. for some time now, the Government of Nigeria has given specific research funds to finance post-graduate projects.

Prof. Thimm made at first three general points:

1. Research aspects of post-graduate training programmes are important and must be taken seriously.

2. Post-graduate research programmes can contribute considerably to the knowledge about local agricultural economics problems.

3. The duration of a post-graduate research project is an important aspect of the total training exercise.

Prof. Thimm then pointed out a number of problem areas with respect to post-graduate research programmes:

a) Students usually find it hard to submit their thesis within the allowed time limit. But a graduate student must be able to write a thesis in a given time period.

b) The selection of research topics should be based on the student's as well as society's interests.

c) Supervision of many students research projects is an intractable problem. This could be eased by replacing individual supervision by:

  - supervision of groups of students writing on the same subjects, but with regional differentation
  - supervision of groups of students writing on different subjects, but located in the same geographical area.

d) Post-graduate research programmes need to receive sufficient funds to carry out the field work.

e) While a post-graduate research thesis must be of comparable academic standards, the research work must also be relevant to the development problems of the country concerned.

Discussion:

Participants were more unanimous on the need for post-graduate research programmes than on training objectives and content. Some participants, however, expressed views against the traditional role of research, e.g. of doing research merely to accumulate knowledge for its own sake.

Prof. D.G. Belshaw gave a number of suggestions with respect to a new look at the role of research:

1. Research should be used for training in operational areas. The length of research training will depend on the skills required.

2. In planning post-graduate research programmes, social productivity of research needs to be taken into account. Research should be relevant to the problems and needs of society. This calls for multidisciplinary research.
3. There is a need for local centres to plan research activities.
4. There is a need to move away from the traditional criteria of assessing research performance. A new approach may include for academic assessment also:
   - confidential reports
   - lengthy memos on ag economic subjects
   - contribution of published articles to the solution of social problems.

Prof. Joy gave the following distinction between a research exercise and a study: A research exercise is a routine activity carried out for the sake of familiarising the student with certain procedural aspects of research. A research study is a scientific exploration into some problem with a view to analysing and/or solving it.

To introduce the problem solving attitude in research it has been suggested to relate research closely to national development plans.

Arrangements with credit institutions or ministries may be made so that students may do research and be productive at the same time. These contacts may let them move into a job also.

There may be a problem in the way of presenting the research results, which differs between a thesis and an administrative report. A problem in multidisciplinary research is that one has to rely on other faculties.

Multidisciplinary study should not be stressed too much: in order to be a useful member in a multidisciplinary team, one must be strong in one's own discipline. So, again, training of students should provide an attitude favorable to multidisciplinary work.

A good research outline is a pre-requisite for a thesis. Data collected by the students should be stored, otherwise they will be lost. Getting primary data is often an expensive affair. Therefore, students should as much as possible be plugged into a data collection effort of the government, which may be of mutual interest.

## 2.1 Research and publications:

### Post-graduate students research at the University of Nairobi/Kenya

The research programme of the Department evolved in three phases according to the capacities available. In the beginning, the commitments of the Department did not leave enough time to start any major programme at all. The research was limited to studies of individual staff members, e.g. in the field of horticultural marketing and rural development.

With the registration of the first M.Sc. students (by thesis only) a more concentrated effort could be started. Three topics found special interest:
1. Employment problems
2. Co-operative development
3. Farm input efficiency.

Additional individual studies are indicated in the list of post graduate students registered in the Department.

With the introduction of taught M.Sc. courses since 1973, the third phase was started. The increased number of M.Sc. students and specialized staff allow to concentrate on research projects in three major disciplines:
1. Farm Management
2. Agricultural Marketing
3. Agricultural Development Economics.

The Department tries to combine in these fields individual choices of students and staff to take an interesting research project with the need to cover certain commodities or geographical areas in detail for a useful analysis of Kenya's economy or of a particular agricultural development sector. In such a way it is hoped that the Department will be able to contribute systematically to the research efforts in the field of social and economic sciences for East Africa's agriculture.

### Departmental Economic Studies (C S 9)

1. Kariithi, A.N.: Small Scale Irrigation Schemes in Isiolo District, Kenya. July 1972

2. Masinde, S.: Evaluation of Farm Purchase Societies in Rift Valley, Kenya. January 1973
3. Errington, A.: Unemployment and the Kenyan Sisal Industry. May 1974
4. Bunyasi, J.: Labour in the Kenya Coffee Industry. May 1974
5. Owour, G.: A Case Study on Successful entrepreneurship in South Nyanza. July 1971
6. Muthee, A.M.: Agricultural Marketing Training in Kenya. December 1973.

Extension M.Sc. Research Topics, 1973-75

The topics dealt with in the 1973-75 programme were as follows:-

1. Bazirake, L.: Factors Affecting the Extension Work done by Mwanamugimu Unit near Kampala, Uganda
2. Chitere, P.A.: Introduction of Grade Dairy Animals in Kakamega District: Effectiveness of Agricultural Extension
3. Kayondo, B.D.: The Effect of DFI Courses on Improved Farming Practices and Innovations
4. Kibagomagoye, K.W.: The Role of Extension Services in the Introduction of Cocoa in Kyagwe District, Uganda
5. Nyombi, G.B.R.: Establishment and Growth of the Smallholder Tea Industry in Bukoba District - West Lake Region - Tanzania

First M.Sc. Course in Agricultural Marketing, 1974-76

This programme started in June, 1974 consisting of one year's course work and one year devoted to a research project. Some 14 students, from Ethiopia, Uganda, Kenya and Tanzania, successfully completed their course work. Their research projects, listed below, are due to be completed in the second half of 1976.

1. Ireri, E.K.: Structure, conduct and performance of Kutus local maize market, Kirinyaga District, Kenya
2. Kariungi, F.T.: Structure, conduct and performance of Kitui local maize market, Kenya

3. Argaw Kebede: Marketing of grain in the Ada District, Ethiopia
4. Nyiti, Z.A.: Maize marketing in Tanga Region, Tanzania
5. Mbogoh, S.G.: The economics of production and marketing of potatoes in Meru District, Kenya
6. Maritim L.H.K.: Analysis of produce flow to Wakulima Wholesale Market, Nairobi
7. Byaruhanga, J.K.: The performance of the Horticultural Co-operative Union Limited (HCU), Kenya
8. Hillen, B.: Procurement problems of the passion fruit industry in Kenya
9. Kivunja, C.D.: The economics of cattle and beef marketing in Kenya
10. Ngumi, P.D.: Pricing efficiency and seasonal supply pattern for slaughter cattle in Kenya
11. Mbatha, J.K.: Procurement problems of the pig processing industry in Kenya
12. Akello-Ogutu, A.C.: The economics of poultry and egg marketing in Nairobi
13. Berhe T. Berham: The retail system for meat in Nairobi
14. Onchere, S.R.: Structure and performance of agricultural product and factor markets in the Northern Division of Machakos District, Kenya.

## Staff and graduate students research at the University of Ibadan / Nigeria (C S 8)

To run successfully a post-graduate programme, the research framework must be broadly based. The department has operated many research projects which can be grouped under four main heads. These are (i) individual staff projects, (ii) group projects, (iii) graduate student projects and (iv) public service projects.

With respect to individual interests, the members of staff of the department have carried on active research projects directed towards important economic and social problems affecting agricultural development, most especially in their fields of specialisation within agricultural economics discipline. These projects have usually been on ad-hoc basis and on individual scouting for finance from Foundations and/or the University Research Fund. Usually the research projects are not designed with the inclusion of additive M.Sc. projects which can be aggregated later, since they are seriously constrained by inadequate funding. However, it has been possible to put one or two post-graduate students on staff research projects which had some fairly substantial funding. The results of individual research projects are usually published as journal articles. Existing or recently completed research projects are:

| | | |
|---|---|---|
| (i) | Olayide, S.O. | Nigeria's Foreign Trade and Commodity Development. |
| (ii) | Olayide, S.O. | Economics of Livestock Production in Southern Nigeria. |
| (iii) | Olayide, S.O. | Farm Enterprises Selection and Combination in Guinea Savannah of Nigeria. |
| (iv) | Olayide, S.O.<br>&<br>Idachaba, F.S. | Processing and Storage of Agricultural Produce in Nigeria. |
| (v) | Olayide, S.O.<br>&<br>Ogunfowora, O. | Least Cost Feeds for Livestock Production. |
| (vi) | Olayide, S.O.<br>&<br>Olayemi, J.K. | West African Trade and Primary Production. |
| (vii) | Olayide, S.O<br>Ogunfowora, O.<br>Essang, S.M.<br>&<br>Idachaba, F.S. | Rural Integrated Development and Food Production in Nigeria. |
| (viii) | Olayide, S.O. | Agricultural Policy for Peasant Farmers in Nigeria. |
| (ix) | Miller, L.F. | Indigenous Credit and Savings Societies Serving Farmers, 1974 - 1977. |
| (x) | Miller, L.F. | Co-operatives as Suppliers of Production Credit for Small Farmers, 1974-77. |
| (xi) | Miller, L.F. | Administrative, Institutional and Infrastructural Constraints on Adoption of Recommended Practices in Maize and Rice Production, Western and Kwara States. |

| | |
|---|---|
| (xii) Anthonio, Q.B.O. | Tobacco Economics Survey in the Western State. |
| (xiii) Anthonio, Q.B.O. | Supply and Price Fluctuation for Food-Stuff in Ibadan. |
| (xiv) Adegboye, R.O. | Cocoa Rehabilitation and Replanting in the West (Socio-Economic Study). |
| (xv) Adegboye, R.O. | Compulsory Acquisition of Land and the Subsequent Compensation Problems. |
| (xvi) Adegboye, R.O. | Effects of Irrigation Practices on Land Tenure. |
| (xvii) Oni, S.A. | The Economics of Cocoa Processing in Nigeria: A Case Study of an Agro-Industrial Project. |
| (xviii) Oni, S. A. & Akinwumi, J.A. | Economics of Integrated Rice Production in North-Western State of Nigeria. |
| (xvix) Essang, S.M. | Investment Pattern of Licensed Buying Agents. |
| (xx) Essang, S.M. | The Role of the Non-Farm Rural Sector in Employment Generation. |
| (xxi) Essang, S.M. | Problems of Technology Choice in Agricultural Development. |
| (xxii) Idachaba, F.S. | Uncertainty and Diversification in African International Trade. |
| (xxiii) Idachaba, F.S. | Studies in Economics Structure and Public Revenue Instability. |
| (xiv) Idachaba, F.S., Ogunfowora, O. & Essang, S.M. | Integrated Rural Development in Kwara State. |
| (xxv) Weidemann, W.C. | Private Economic Benefits of Migration in the U.S. |
| (xxvi) Akinwumi, J.A. | The Potentials for Dairy Development in Nigeria. |
| (xxvii) Akinwumi, J.A. & Oni, S.A. | Economics of Agribusiness Enterprises in Nigeria. |
| (xxviii) Akinwumi, J.A. | Barriers to the Growth Development of Co-operative in Nigeria. |
| (xxix) Akinwumi, J.A. | The Cost of Capital: An Investigation of What Investment Funds Cost Business Enterprises. |
| (xxx) Akinwumi, J.A. | Development of Farm Accounting Manuals for Teaching. |
| (xxxi) Adeyokunnu, T.O. | Consumption and Expenditure Analysis for Eggs in Western Nigeria. |

Second, group research projects have had considerable measure of success right from the beginning of the Miller administration. These projects are large long duration programmes financed by the Rockefeller Foundation and other interested bodies. They are:

i. Rural Development Research Project in the Guinea Savannah - R.F. Project.
ii. Extended Badeku Rural Development and Research - R.F. Project.
iii. Rural Employment Research - MSU/USAID Project.
iv. Agro-industry Research - R.F. Project.

These relevant research projects have been planned with the objective of incorporating post-graduate projects in order to produce a fairly additive series of individual reports. The end-results are useful project reports, journal articles , student dissertations, technical reports and other learned papers such as Rural Development papers and Extension Development Digest.

Third, student research projects have had a very chequered history. Each student is the alpha and omega of his project and no efforts are made to present an additive framework. In view of the fact that the field is the laboratory of agricultural economics, this has been a very expensive exercise, especially when field enumerators are involved and secondary sources are hard to come by. This is a major limitation of the post-graduate programme. As of new, M.Sc. dissertation research will cost between ₦ 5,000 to ₦ 6,500 whilst doctoral research will cost between ₦ 10,000 - ₦ 15,000. This raises a fundamental issue of getting a large project that will cost about ₦ 40,000 into which can be slotted about 10 Ph.D. candidates effectively, thereby considerably cutting down expenses to about ₦ 4,000 per candidate. This scheme commends itself in view of its cheapness, additiveness, efficiency of implementation and administrative tidiness. Under such a scheme, the end-results will be reports, dissertations/theses, journal articles and monographs/textbooks.

Fourth, public service projects have come at the request of government and other interests. The department has had many of these in the last six years. Typical examples are:

1. Food Marketing Research in Western and Midwestern States - Intergovernmental Project already completed by Dr. Q.B.O. Anthonio.
2. Flue-cured Tobacco Research - N.T.O Project completed by Dr. Q.B.O. Anthonio.
3. Feasibility Studies of Rice Production in North-Western State - Government Project completed by Dr. S.A. Oni.
4. Feasibility Studies of Rice Industry in Kwara State - Government Project completed by Dr. J.K. Olayemi.
5. Mechanisation Project - Federal Government Project of which Dr. S.A. Oni was the project leader.
6. Livestock Feed Project - Federal Government Study of which Dr. O. Ogunfowora was the project leader.
7. Fertilizer Project - Federal Government Study of which Dr. A.O. Falusi was the project leader.
8. National Food Balance Sheet - Federal Government Project completed by Professor S.O. Olayide and his colleagues.
9. Perspective Plan Document - Federal Government Project completed by Professor S.O. Olayide.
10. Agriculture Sector of 3rd National Plan - Federal Government Project of which Professor S.O. Olayide was the project leader.
11. Agriculture Sector Study of Lagos State of which Professor S.O. Olayide was the project leader.
12. Agriculture Sector of Lagos State 3rd National Plan - Government Project completed by Professor S.O. Olayide and Professor S.K.T. Williams.

Many other projects of this nature are in the pipeline and it is not proper to mention them at this stage. The results of these projects are published in reports, monographs and sometimes journal articles on certain technical aspects of the studies.

## VII. Administrative aspects of training programmes

### 1.0 Administration and regulations

Plenary Session: Thursday, July 29, 1976

Chairperson: Mrs. ROSE WARUHIU

1. Speaker: Mr. G. S. NGOMBO

The Registrar's Department of the University of Nairobi has an Academic Division which is divided into two sections; namely:

(a) the Undergraduate Department and

(b) the Postgraduate and Research Department.

This Division is headed by a Deputy Registrar, assisted by two Senior Assistant Registrars.

The Post-graduate and Research Department consists of two seperate sections: Postgraduate and Research. The duties that fall under the Postgraduate Section are as follows:-

i) To review the University's requirements and procedures for registration to higher degrees and to advise the Administration thereon.

ii) To process, through the appropriate committees, all applications for registration for higher degrees and postgraduate diplomas and certificates.

iii) To maintain records and statistics on postgraduate students and programmes.

iv) To liaise with supervisors in keeping the progress of postgraduate students under constant review and to process postgraduate examinations.

The activities of the Research Section should also be outlined here since the Post-graduate and Research Department is meant to co-ordinate the activities of Postgraduate Students and Academic Staff members. The duties that fall under this section are as follows:-

i) To receive all applications for University (including University administered) research funds and to evaluate the proposed research projects and advise the Administration and the University Research Committee thereon.

ii) To receive and review regular progress reports on projects and to report to the Research Committee.

iii) To keep up-to-date records of all on-going University research projects.

iv) To co-ordinate the distribution of Research Papers.

Processing Applications:

After a programme is approved, it is sent for advertisement in the local press. All interested candidates apply formally for application forms and further contact the department of interest to seek qualification before completing the forms. Honors degrees have first preference due to the fact that the Government usually offers 50 scholarships. This method helps in the screening process.

Study Duration

Full time registered students for the M.Sc. degree are given up to 3 years (and 5 years for part-time students). Ph.D. candidates have a range of 3 to 4 years under the full time arrangement and longer if part-time.

Examination Method

Examiners (internal and external) are selected by the Faculty Committee and not by the Registrar. The Internal Examiners will receive the candidate's thesis for evaluation and forward their findings to the External Examiner who, in turn, will prepare a consolidated report for submission to the Vice-Chancellor. Oral examinations are required for the Ph.D. though some faculties (e.g. veterinary medioine) require orals for the master's degree.

Financial Aspect

Postgraduate students (on a full time basis) receive a stipend of Shs. 30,000/- per year; this amount excludes all fees but includes the cost of typing the thesis, board, etc. Total cost for fees ranges from Shs. 7,000/- to 10,000/- giving a grand total cost of Shs. 37,000/- to 40,000/- for the first year and 33,900/- for the second year.

Ph.D. candidates' costs are less in that the first year is Shs. 34,000/-, 33,500/- in the second year and 34,300/- in the third year.

Scholarship sources
Ministries of the Kenya Government and DAAD, SIDA, NORAD, etc. provide financial support for postgraduate studies.

Awarding Scholarships
Students with upper class degree awards, for example Division I, have first preference for scholarship consideration.

The Deans' Committee awards scholarships by reviewing each candidate's application and then prepares a list from which the Registrar issues letters to successful applicants. The terms of the University scholarships are explained, for example stipends are tax free, no board for postgraduates, and in case a candidate withdraws on his own, he will refund the university.

2. Speaker: Dr. H. J. NIESEL

Dr. Niesel, representing the German Academic Exchange Service (DAAD) as one of the donor agencies, raised a number of questions with regard to a possible speeding up and streamlining of administrative procedures in the cooperation between universities and donors.
1. Timing:

a) How can a university speed up its planning machinery, so that 18 months in advance its requests for staff and scholarships can be brought forward ?

b) Can by that early date be made available
a course programme approved by the Senate ?
a reliable staff/supervisor list ?

c) How can the time gap between acceptance of students to a postgraduate course by the Higher Degrees Committee and the arrival of the complete file of each student at an agency's Head Office be narrowed ?

2. Regional Centres:

a) What criteria should be used in defining regional centres ?

b) Which role is AFAA prepared to play in defining them ?

c) Under which conditions will it be possible to accept and supervise students from other African countries ?

d) How can an exchange of African professors be handled within a region ?

3. Foreign Students:

a) Is it feasible to supervise foreign (African) students in a certain department ?

b) Is it more useful to have the research/fieldwork carried out in the host country or in the home country ?

c) How can supervision be secured in the home country ?

d) Will the host university give preference to foreign students in the housing question ?

e) How shall the stipend be allocated during field/researchwork in the home country ?

4. Finance:

a) Can the university clearly state the amount of money required for a postgraduate training ?

b) Will the university accept the responsibility of paying the students excess money for those months they have been prolongated for submission of thesis ?

5. Administrative Cooperation:

a) Is the university prepared to start discussions with donor agencies on an administrative agreement, in order to minimise administrative work for both sides ?

b) Which should be the minimum of papers required to be submitted when requesting agencies' help for scholarships or staff aid ?

## 6. Cooperation between Universities and Donors:

Will the university be prepared to invite all potential donors to discuss its development plans and to share the requests by setting up consortia ?

### Discussion

The following are comments on administrative aspects of post-graduate training in agricultural economics emerging from the discussion.

### A. Application and admission

(a) Application forms could be sold to cover some of the administrative costs,

(b) Regulations, procedures, acknowledgements, etc., should be widely publicised to reduce students' frustration,

(c) The procedures for admission of students to post-graduate training programmes seem to be too cumbersome in many cases, even to the extent that problems arise in trying to induce students to come to a post-graduate training. The policies differ between countries,

(d) The academic staff is often heavily charged with administrative functions, for which they are not even competent. The opportunity costs of the professor's time should well be taken into account. The prerogative to decide whether a student will be admitted should be left to the Faculty, not to the administrators.

### B. Course work and research work

(a) Postgraduate students should participate in seminars on related projects before undertaking their own research activities. This method has proven to be helpful in preparing students to undertake research and in presenting their findings,

(b) Research topics should be related to on-going projects of governments, banks, etc.. and university staff should be involved in the co-ordination process.

(c) Students should not be given the liberty to by-pass their advisor, they should seek advice from others only with the approval of their supervisors because the major function of a supervisor is to guide students in the interpretation of concepts in their related areas of specialization.

C. Thesis

(a) Each thesis must carry the supervisors' signatures before it is forwarded to the Faculty Committee (headed by the Dean) where errors are checked. It is then forwarded to the Faculty Board.

(b) External examiners should write their reports for submission independently.

(c) Due to limited funds, Universities can develop long term loan schemes to assist students where necessary in getting their thesis completed.

(d) In order to reduce the high cost of typing, a thesis should be submitted in parts (in chapters) to the main advisor. After corrections are made, it should be passed on to the committee members. Only when the whole thesis is satisfactorily completed should the go-ahead be given for final typing.

D. Foreign students

(a) Sponsored foreign students are faced with problems of housing, language, etc. The housing problem can be solved in one of three ways:-

- foreign students could be given preference to local students accommodation,
- the administration could contact near-by land-lords whose rates are at a par with those of the university and recommend such landlords to students or
- the University could invest in student/staff housing.

(b) To surmount language problems, foreign students should be given
- recommended readings and
- recorded lectures.

## 2.0 Sponsoring and financing

Plenary Session: Friday, July 30, 1976

Chairman: Dr. E. DEGANUS

### 2.1 Aspects of sponsoring post-graduate programmes: priorities, policies, instruments, expectations, constraints

The session addressed itself to the topic "Aspects of Sponsoring Postgraduate Programmes: priorities, policies, instruments, expectations and constraints". During this session, the representatives of various donor agencies and other agencies that facilitate the establishment and operation of postgraduate programmes, were given the opportunity to speak on behalf of their agencies' policies and programmes. The organisations that were represented were: The Association of African Universities (AAU), The Association of Faculties of Agriculture in Africa (AFAA), The Rockefeller Foundation, The Ford Foundation, The German Agency for Technical Cooperation (GTZ), Deutscher Akademischer Austauschdienst (German Academic Exchange Service, DAAD), The Netherlands Universities Foundation for Internation Co-operation (NUFFIC), The Inter-University Council for Higher Education Overseas (IUC) and The Association for the Advancement of Agricultural Sciences in Africa (AAASA). Of course it was noted that none of these organisations exist solely to promote the development of postgraduate programmes in agricultural economics. Whatever benefits agricultural economics derives from their programmes is only a part of their general objectives.

The AAU (cf. WP 19)

Among the objectives of the AAU those relating particularly to post-graduate training programmes are

(i) to collect, classify and disseminate information on higher education and research particularly in Africa,

(ii) to promote co-operation among African institutions in curriculum development and in the determination of equivalences of degrees,

(iii) to encourage increased contact between its members and the international academic world, and

(iv) to organize, encourage and support seminars and conferences between African University teachers, administrators, and others dealing with problems of higher education in Africa.

AFAA (cf. WP 20)

The objectives of AFAA are similar to those of AAU with the important difference that AFAA is specifically concerred with the development of Agriculture in Africa, through fostering agricultural education and research. It should be noted that AFAA neither concentrates on nor initiates postgraduate programmes. It only fosters these programmes. The organisation has working relations with the FAO, UNESCO and other similar bodies.

ROCKEFELLER FOUNDATION (cf. WP 6)

The Rockefeller Foundation's interest in Agricultural Economics is within the broader context of the Foundation's support for higher education. In order to make the most effective use of limited resources for higher education the foundation has sought to concentrate on the development of regional centres, to serve the nation and regions in which they were located. Thus at both Ibadan and East African Universities, support has been concentrated in the areas of Agriculture, Social Sciences and Medical Sciences, with agricultural economics benefiting for support under the first two categories. The types of support offered are staff development, visiting faculty and research and teaching activities.

FORD FOUNDATION (cf. WP 17)

The aims and aspirations of the Ford Foundation are similar to those of the Rockefeller Foundation. The Foundation assists in the development of agricultural economics in the West and Central African Regions in the following ways:

1. Strengthening of postgraduate programmes at selected universities within the region through staff development fellowships.

2. Provision of fellowships for postgraduate training at the M.Sc. and Ph.D. levels both in the region and overseas.
3. Support for research at national and international agricultural research centres, and
4. Provision of advisors and consultants to assist directly national agricultural planning efforts.

DAAD (cf. WP 9)

DAAD is concerned with the promotion of international academic and university relations. Its principal aim in the African continent is to assist and co-operate in staff development in universities and in the implementation of research work. It is important to note in this context that over the last six years, the Department of Agricultural Economics at the University of Nairobi has been assisted by DAAD through the services of six German scientists to define and implement M.Sc. programmes as well as through scholarships to a large number of post-graduate students.

GTZ (cf. WP 16)

GTZ provides - inter alia - support for scientific institutions, namely universities, research stations and scientific service stations overseas. The areas of primary concern are agriculture and forestry, engineering, economic and social affairs and infrastructural development. In all respects, GTZ operates like the other donor agencies mentioned above by the provision of staff on long term and short term assignments, provision of scientific and laboratory equipment, including books and other training aids, and the provision of capital for the construction of building facilities for teaching and research.

NUFFIC (cf. WP 12)

NUFFIC is a coordinating organisation in Holland for all University programmes in developing countries. NUFFIC like the other bodies mentioned earlier tries to apply the concept of concentration rather than spread its resources thinly. In Africa, its target countries are Kenya, Tanzania, Ethiopia and Sudan. NUFFIC's emphasis is on the mobilization of local potential and enhancing competence in the technical agricultural sciences.

IUC (cf. WP 4)

The main function of IUC is to encourage co-operation between universities in Britain and those in a number of countries in Africa and elsewhere and to assist generally in the development of higher education in those countries. The five major aspects of the IUC's work include links, local staff development, staff recruitment, overseas visits, and general consultative services.

In the discussions that followed the introduction of these bodies it was felt by some participants that the activities of some of these bodies (particularly AAU) were not given sufficient publicity in many African Universities. The opinion was also expressed that the concentration on regional centres (or target areas) could result in needless rivalry among the donor agencies. It was even suggested that the AAU might consider convening a meeting of all relevant donor agencies so that co-ordination of their activities could be rationalized.

Concern was expressed about the multiplicity of selection of beneficiaries for scholarships, the way in which stipends were paid, and the items of expenses which are covered by the grants from donor agencies. This multiplicity of ways often leads to administrative complications. It was felt that donor agencies might meet to streamline such matters. It was suggested that perhaps the individual universities benefiting from these facilities should take the initiative in organising such a meeting among the donors.

Attention was drawn to the concentration of the efforts of donor agencies in English speaking African countries almost to the exclusion of the French speaking countries. It was also pointed out that emphasis in the programme of the donor agencies should be on rural development, rather than on agricultural economics.

The idea was also expressed that recipient universities should get together to map out their priority areas so that these can be presented to the donor agencies. This should be preferred to the situation in which the initiative comes from the donor agencies. Finally, the need was mentioned for the donor agencies to effectively combine staff development with the provision of research facilities (including finance).

## 2.2 Financial aspects of post-graduate training

Plenary Session: Saturday, July 24, 1976

Chairman: Mr. M.K. GATERE

1. Speaker: Prof. A. WEBER (University of Nairobi)

Any genuine attempt to estimate the total training costs of localizing the teaching staff in a Department of Agricultural Economics will be faced with many methodological approaches. Some Universities have developed comprehensive mathematical models to estimate future staff requirements, others use simple calculation methods. If we want to use a more simple one we may recur on established estimation procedures in the Faculty of Agriculture of the University of Nairobi.

The estimation of future staff requirements as depending variable is derived linearly from the planned number of students intake, the number of introduced degree courses, the implicit supervisory work and the assumed teaching load (FTSE)[1]. As soon as these independent variables in the elapse of time take different values (new degree courses are introduced or established courses are dropped) changes in staff requirements will occur. However, to keep the planning exercise for our discussion simple, staff requirements summarized in table A1 (see p. 110) are assumed as true estimates of the future staff requirement in a Department of Agricultural Economics. The estimation methodology used in this table has, however, one big deficiency, because it is a naive calculation without economic considerations. It does not relate staff requirements to the pertinent training costs involved. This aspect is, therefore, neglected by many planners of post-graduate programmes.

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[1] The underlying and very restrictive assumption for these calculations were:

a) a full time student equivalent (FTSE) is equal to 800 contact hours per year.

b) the amount of supervisory work of all members of staff for post-graduate work is estimated at a minimum of 200 contact hours. According to our present experience 250 hours would be a better estimation.

c) all positions established are always filled, there are no vacancies and no study leave, no extended home leave and no sick leave is granted or occurrs. No staff member is engaged in consultancy work or in time-consuming research work and each staff member devotes his time to the overwhelming part exclusively for teaching and supervisory work.

It is one of the most meritorious aspects of the Sozi-Report[2] that some light has been thrown on the costs involved in an overall training programme of staff development. Most African B.Sc. Programmes in agriculture aim to train for a general agriculturalist with emphasis on natural sciences. Higher training in agricultural economics for staff development is therefore extremely vulnerable in the case of insufficient financial and moral support and inadequate planning of post-graduate programmes.

The Sozi-Report has, however, the following shortcomings in its cost estimation:

a) the recruitment basis is too narrowly defined (each selected M.Sc. or Ph.D. candidate becomes automatically a senior staff member - there are no drop-outs and no failures !);

b) the planned expansion of introducing new degree courses in the Faculty of Agriculture has not been accounted for;

c) the specific time required to train Ph.D. candidates overseas in Agricultural Economics has been underestimated[3];

d) the constraints in recruiting expatriate staff in due time and with the desired qualification have not been made explicit.

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[2] M.K. Sozi, Analysis of Requirements and Resources for Developing the Faculty of Agriculture, University of Nairobi. Nairobi, Kenya 1975 (Manuscript).

[3] Sozi has assumed in the case of overseas training for all Departments three years Ph.D. training. It seems according to past experience more reasonable to assume four years Ph.D. training, because Ph.D. courses for agricultural economists in the U.S.A. put high emphasis on economic theory and quantitative methods, where our students even at the M.Sc. level are not trained properly due to a poor background in mathematics. Other deficiencies in teaching economics at a higher level are due to the time constraint in undergraduate and post-graduate programmes.

To avoid tedious repetition and to make this report partly comparable to the results of the Sozi-Report we have adopted his well documented cost figures in planning staff development. Deviations are indicated. The planning task can be described as follows:

OBJECTIVE: Localization of teaching staff subject to the constraints described below

VARIABLES:

a) Student intake;
b) Number of courses to be offered;
c) Teaching and supervisory load for senior teaching staff (FTSE);
d) Percentage of staff members considered as conditional of having a Ph.D. degree to train M.Sc. students locally (75 %);
e) Recruitment ratio considered as suitable and feasible for selecting B.Sc. and M.Sc. candidates for M.Sc. and Ph.D. training (2 : 1 and 4 : 1).

CONSTRAINTS:

a) Time requirements to broaden and to deepen the recruitment basis;

b) Financing training programmes;

c) Availability of suitable expatriate staff.

The objective of localization of teaching staff has to take into account the changing value of the five listed variables (student intake, number of courses, teaching and supervisory load, percentage of Ph.D. holders, recruitment ratio). Further, the impact the constraints exercise on moving ahead in the various training programmes of staff development has to be considered. For instance, the more distinct courses at the graduate and undergraduate level have to be introduced, the less finances are available to broaden and deepen the M.Sc. Programmes, the further away in time is the objective of full localization. It will be one of the most intricate tasks of staff development planners to assess whether the objectives, stated variables and constraints are in accordance. The earlier the various constraints are coming to the awareness of planners the higher is the probability that the goal formulation is adjusted to the resources available and a more meaningful staff development policy results.

To facilitate the planning exercise the value of variables or the coefficients to be considered have to be fixed. Variable coefficients might be introduced with a more sophisticated linear programming approach at a later stage of planning to test the sensitivity of a change in the value of single variables. The coefficients for variables a-c are developed and calculated for 16 positions in our Model Department in table A 1 (see p. 110). Open and not discussed are still variables d) Percentage of staff members required holding Ph.D. degrees and e) recruitment ratio.

Ad d) The lower the percentage of staff members without Ph.D. degree, the higher is the probability that no advanced M.Sc. Programme can be implemented or be continued successfully. Experiences in many departments show that without high calibre staff (or Ph.D. holders) M.Sc. Programmes are subject to collapse either in teaching or in supervisory work. We have assumed that at least 75 % of the staff required should possess a Ph.D. degree or 12 academic staff members out of 16 (see table A 1 p. 110).

Ad e) Recruitment ratio. This ratio determines the recruitment basis quantitatively. The higher the ratio between candidates selected for M.Sc. training to be considered as suitable for further Ph.D. training the broader is the recruitment basis. It is implied by using this ratio that the quality of staff training - ceteris paribus - increases with the recruitment basis.

Countries with a long tradition in higher training[4] have naturally a broader recruitment basis. However, a too narrow recruitment ratio reduces the probability to select the best candidates. Sozi assumes a 1 : 1 recruitment ratio, to be more realistic, a 2 : 1 and 4 : 1 recruitment ratio has been applied in the following calculations.

A recruitment ratio of 2 : 1 means that for 12 candidates considered as suitable for future teaching positions 24 candidates have to be sent abroad for Ph.D. training and 48 M.Sc. candidates have to be trained within the Department locally. Tables 1 and 2 indicate the costs involved.

Sozi assumes that every man-year of training has to be matched by one year of expatriate services. The current rate of one year's expatriate service is equal to 300,000 Kenya Shillings or 36,746.70 US $[5]. Assuming a 2 : 1 recruitment ratio, 192 man-years expatriate service in the Model Department of Agricultural Economics imply a total cost of KShs. 57,600,000 or approximately 7,058,823.53 US $. In table 3 we have summarized the calculations for the 2 : 1 recruitment ratio. Working with a 4 : 1 ratio we had simply to double the costs.

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[4] To have some idea about the competition to enter a University career and the recruitment ratio in a country like West Germany the figures given by Weber and Otto might be indicative. Per year and per senior staff member (with habilitation) one Ph.D. dissertation was published per year in Agricultural Economics. The recruitment ratio would be therefore 50 : 1, or to make the recruitment basis equivalent to the Kenyan case, 12 Ph.D. degrees in Agricultural Economics had to be awarded every year. See: A. Weber and B. Otto, Fachrichtungen in deutschen agrarwissenschaftlichen Dissertationen und agrarökonomische Forschungsbeiträge westdeutscher Fakultäten. In: Forschung und Ausbildung im Bereich der Wirtschafts- und Sozialwissenschaften des Landbaues (Schriften der Gesellschaft für Wirtschafts- und Sozialwissenschaften des Landbaues e.V., Bd. 12). Ed. by H. Albrecht and G. Schmitt. München, Bern, Wien 1975, pp.36, 38.

[5] Obviously Sozi is referring to expatriate services from countries with a Gross National Product (GNP) per Capita more than 5000 US $. (North American and North and Central European countries), where the topping up of Kenya gross salaries (4000-6000 K£ = 9,828 - 14,742 US $) by foreign donors is a prerequisite to attract those University teachers. However, this topping up question of salaries does not arise if the recruitment is directed to the Indian subcontinent, where the GNP per capita is lower and academic personnel seems to be partly abundant.

Table 1: Costs of M.Sc. training for 48 and 96 students locally

| Subject | Years | KShs. | US.$a) |
|---|---|---|---|
| Years needed for each candidate | 2 | | |
| 48 candidates x 2 years | 96 | | |
| Average cost of scholarship | | 72,000 | 8,845 |
| (24 months à 2500 Kshs. = 60,000 Shs Fees for Tuition, Lab.-Registra. = 12,000 Kshs. + 60,000 = 72,000/-) | | | |
| Total costs of local M.Sc. training of 48 candidates (recruit.ratio 2:1) | | 3,456,000 | 424,570 |
| Total Costs of local M.Sc.training of 48 candidates (recruit.ratio 4:1) | | 6,912,000 | 849,140 |

a) An exchange rate of 1 US.$ = 8.14 Kshs. comparable to the Sozi-Report has been adopted. The present exchange rate (20/7/76) is 8.44, which reduces the costs of local training and increases it for foreign training respectively.

Table 2: Costs of Ph.D. training for 24 and 48 students overseas

| Subject | Years | KShs. | US.$a) |
|---|---|---|---|
| Years needed for each candidate | 4 | | |
| 24 candidates à 4 years | 96 | | |
| Average cost of scholarship per year (this includes passages,maintenance, tuition, warm clothing allowance b)) | | 97,989 | 12,038 |
| Total costs of Ph.D. training for 24 candidates, ratio (2:1) | | 9,406,975 | 1,155,648 |
| " " ratio (4:1) | | 18,813,950 | 2,311,296 |

a) 1 US.$ = 8.14 KShs.

b) see Sozi-Report p. 57

**Table 3:** Total Training Costs to substitute 12 Expatriate Staff Members with a Ph.D. degree in the Model Department of Agricultural Economics

(Recruitment ratio 2:1)

| Subject | Costs | |
|---|---|---|
| | KShs. | US.$ |
| Training 48 M.Sc. students locally | 3,456,000 | 424,570 |
| Training 24 Ph.D.candidates overseas | 9,406,975 | 1,155,648 |
| Expatriate services before the Department is Kenyanized - 192 man-years | 57,600,000 | 7,058,824 |
| Total costs | 70,462,975 | 8,639,042 |

The result that 8.639 Mill. U.S.$ are needed to replace 12 expatriate Ph.D. holders shows clearly the strong commitment the respective University and foreign donors have to make if the above stated objective should be approximated in a concrete planning situation.

It might be derived from table 3 and from experience that under the present aid policy of foreign donors the three listed categories (M.Sc. training, Ph.D. training and topping up salaries for expatriate staff) are not evenly covered. The most serious bottleneck seems to occur in Ph.D. training overseas. No donor organization is at present willing or administratively equipped to provide the various Departments in Africa with scholarships at large scale for Ph.D. training overseas.

This overseas Ph.D. training is, however, at present a much cheaper and more feasible alternative than to embark prematurely on local Ph.D. Programmes where most of the staff had to be hired on the international market. It might even be doubted whether the international market is capable to meet sudden arising demands from African countries, if a massive financial assistance programme for post-graduate training in Agricultural Economics could be launched immediately.

Unfortunately, the burdensome task and the high costs in establishing a viable and competitive Department of Agricultural Economics is neither well known by University and Faculty planners nor attracts the sheer number of graduates - regardless of the quality of graduates - in a Department of Agricultural Economics sufficient attention on the priority list of Ministries of Finances for continued budgetary support of post-graduate programmes. As long as this is not the case staff development programmes in Africa will continue to grow slowly.

Table A1: Academic Staff (teaching) Requirements in the Model Department of Agricultural Economics with 16 established positions

| Academic Year and Courses | Contact Hours (a) | Students (b) | FTSE $\frac{a \times b}{800}$ | Academic Staff required $\frac{(a \times b)}{800 \times 6(3)}$ |
|---|---|---|---|---|
| 1979/80 | | | | |
| B.Sc. Agric. | 431 | 100 | 53.88 | 8.98 |
| B.Sc. FST | 54 | 20 | 1.35 | 0.23 |
| B.Sc. Vet. Med. | 20 | 76 | 1.90 | 0.32 |
| B.Sc. Agric. Eng. | 141 | 20 | 3.53 | 0.59 |
| Dipl. Irrig. | 40 | 10 | 0.50 | 0.08 |
| B.Sc. Range Man. | 80 | 20 | 2.00 | 0.33 |
| 1. Undergraduate Teaching | | | | 10.53 |
| M.Sc. Agric. Econ[a)] | 1000 | 10 | 12.50 | 4.17 |
| M.Sc. Agronomy | 40 | 13 | 0.65 | 0.22 |
| M.Sc. Architecture | 10 | 40 | 0.50 | 0.17 |
| M.Sc. Thesis superv. | 200 | 10 | 2.50 | 0.83 |
| 2. Graduate Teaching | | | | 5.39 |
| 1 + 2 Total Teaching | | | | 15.92 |

a) Under the assumption of 400 hours basic Agricultural Economics and 600 hours optional courses (Farm Management, Agricultural Marketing, Development Economics = 3 x 200 hours).

1980/81

The same courses, number of students assumed as in 1979/1980 and the academic staff required should be read as follows:

| | | |
|---|---|---|
| 1. Undergraduate Teaching | | 10.53 |
| 2. Graduate Teaching | | 5.39 |
| 1 + 2 Total Teaching | | 15.92 |

**2. Speaker:** Dr. E. H. GILBERT (Ford Foundation)

The following information on the costs of postgraduate training in agricultural economics at institutions in Africa and overseas is based upon the Ford Foundation's recent experience with a fellowship programme serving the West and Central Africa regions. Costs are one of the elements of the equation which we (particularly as economists) should consider in weighing the merits of various alternative training arrangements. There are obviously other elements, notably differences in the time quality and relevance of cash alternative. No attempt is made in the present paper to rigorously compare the costs with the benefits in cash instance, especially in view of the diversity of opinion which exists on the relative weights which should be given to certain benefits. Such as time required and relevance. The information will hopefully provide the basis for making such assessments.

## Basis of Cashings

The information presented here on costs is admittedly quite incomplete. Only the direct, easily identifiable costs are included, namely those contained in the actual fellowship award. Not included is the subsidy element which is borne by most institutions since tuitions do not characteristically cover the full cost of training.

The costs of the fellowships for study overseas contain some administration costs, namely the charges levied by Institute of International Education (IIE.). The administrative costs borne by the Foundation, but not charged against the fellowship are omitted. The most significant excluded factor is the cost of the time of the programme officer who is responsible for assisting in identifying and screening fellowship applicants; making arrangements for the study programme; and monitoring the progress of the awardee.

The following table summarizes the major elements of alternative postgraduate training programmes, including costs, time required and the nature of the programme. The costs are based upon current prices which have changed considerably in recent years and are likely to continue to change in the future. Foundation fellowships are not restricted to particular countries, but for reasons of simplicity and lack of readily available data alternatives are continued to our experience in supporting fellowships at the University of Ibadan in Nigeria and U.S. institutions.

Table 1: Costs of Alternative Post-graduate Programmes in Agricultural Economics in Nigeria and the U.S.

| | NIGERIA | | U. S. | |
|---|---|---|---|---|
| | COST US $ | YEARS | COST US $ | YEARS |
| M. Sc. Programmes | | | | |
| 1. No significant research project | 5,000 | 1 | 12,000 | 1 |
| 2. Thesis project using existing data - no significant field research | 10,000 | 2 | 22,000 | 2 |
| 3. Thesis project involving intra-regional travel and field research | 15,000 | 2 1/2 | 30,000 | 2 1/2 |
| Ph.D. Programmes | | | | |
| 1. By-passing M.Sc. programme | | | | |
| a. No significant field res. | | | | |
| i) one year of coursework | 15,000 | 3 | - | |
| ii) two years of coursework+ | 27,000 | 4 | 45,000 | 4 |
| b. Field Res. in Africa | | | | |
| i) one year of coursework | 22,000 | 3 1/2 | - | |
| ii) two years of coursework+ | 34,000 | 4 1/2 | 57,000 | 5 |
| 2. Post M.Sc. | | | | |
| a. No significant field res. | | | | |
| i) no course-work | 10,000 | 2 | - | |
| ii) one year of coursework+ | 22,000 | 3 | 35,000 | 3 |
| iii) two years of coursework | - | | 45,000 | 4 |
| b. Field Research in Africa | | | | |
| i) no course-work | 17,000 | 2 1/2 | - | |
| ii) one year of coursework+ | 29,000 | 3 1/2 | 47,000 | 4 |
| iii) two years of coursework | - | | 57,000 | 5 |

+ Assuming one year of Ph.D. level coursework taken at U.S. University in case of Nigerian Ph.D. programmes.

## Comparison of M.Sc. Programmes

At the M.Sc. programme level training in Africa appears clearly advantageous over US training from nearly every perspective. The cost is significantly less in each instance. The time required is identical. Field research in Africa is obviously a feasible possibility in the case of the African M.Sc. programme. If it is further assumed that the course work and research at the African institution is equal in quality to that available in the US institution (in terms of mastery of theory and analytical techniques) and superior in terms of relevance to African conditions, training in Africa to the M.Sc. is clearly preferable. This perspective is particularly applicable in the case of institutions requiring agricultural economists with training up to the level of the M.Sc. only.

## Comparisons of Ph.D. Programmes

The Ph.D. programmes are grouped under two major categories. Notably, those which by-pass the M.Sc. programme completely and those which follow upon an M.Sc. programme. Under each major category a series of options are presented involving varying degrees of coursework and thesis research. Although the shortest and least expensive alternative is clearly the straight through Ph.D. programme at an African institution, this includes only one academic year of course work whereas Ph.D. programmes at US institutions characteristically involve 2 years of coursework.[+] An option allowing for a second year of coursework at a US institution for candidates at Nigeria universities has been included under the Nigerian Ph.D. programmes which adds one year and an estimated $ 12,000 to the cost. The Foundation has not yet had sufficient experience with the one additional year of coursework in the US option to make an assessment of its the feasibility although one Cameroonian fellowship awardee who is taking his degree from the University of Ibadan is currently following such a plan. This option appears attractive in terms

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[+] Often students coming from developing countries with only first degrees may spend three years doing coursework including senior undergraduate courses recommended.

of time, costs and quality assuming that a good blending of the two components of the coursework can be obtained.

The options involving taking the Ph.D. degree from a US institution are more expensive in all instances. The gap is especially large when field research in Africa is involved since those on US. Ph.D. programmes must return to Africa, a process which is both expensive and time consuming. The assumption that an additional six months time and $ 5000 is required for those in American Ph.D. programmes undertaking field research in Africa may appear high, but is in line with our experience. In addition to substantially higher travel costs, additional time is required to (i) make arrangements to carry out research after involving affiliation with some local institution in Africa; (ii) movement of residence from the U.S. to Africa and back; and (iii) shipment of research results (questionnaires, etc.)

The category under Ph.D. programmes titled "Post M.Sc." illustrates the difference in time and cost.

The "Post M.Sc." Ph.D. programmes can be combined with the M.Sc. programmes to generate estimates of the time and cost of alternatives involving acquisition of both degrees. In comparison with Ph.D. programmes which by-pass the M.Sc., the two degree options are generally longer and more expensive. For example an M.Sc. programme in Africa followed by a Ph.D. from a U.S. University, can cost between $ 50,000 and last five to seven and a half years as compared to $ 45,000 and four years for a straight through Ph.D. at a U.S. institution, which does not involve field research in Africa. U.S. institutions commonly require two years of coursework for entering Ph.D. candidates regardless of whether or not an individual already possesses an M.Sc. (except when the M.Sc. degree is from the same institution). This requirement normally applies to holders of M.Sc. degrees from U.S. and non-U.S. institutions alike.

In terms of time and cost, programmes which by-pass the M.Sc. (or at least the M.Sc. thesis) appear preferable to those requiring it. Nevertheless, the Foundation feels that M.Sc. training, particularly in Africa, is desirable and in the West and Central African office fellowships at the M.Sc. level are tenable only at institutions within the region. This position is justified by considerations of quality and relevance as well as cost. Not every student embarking on postgraduate studies is going to be suitable for Ph.D. studies and many at the M.Sc. level may be in immediate demand by governments and parastatal organizations. From the relatively larger number of M.Sc. students that can be trained in the region one can chose those with a particular aptitude for Ph.D. studies, thus reducing potential wastage rates from those experienced in "straight-through" Ph.D. programmes. (It is also possible that selection of Ph.D. candidates from the more apt M.Sc. students will shorten the average length of the Ph.D. programme itself). Although the combined M.Sc. + Ph.D. would take longer than the "straight-through" Ph.D., the net effect of lower wastage per Ph.D. produced and longer study period might result in substantially the same average cost per Ph.D. In terms of quality, one can be reasonably sure that the extra work at the M.Sc. level will be professionally useful even if it does not earn exemption from some required Ph.D. courses. The Foundation has been exploring ways in which there might be worked out a better "fit" between African M.Sc. programmes and Ph.D. programmes overseas in the case of post-graduate students following this alternative. Apart from the fact that this fit has not been possible even among U.S.-based institutions, which seldom give credit for M.Sc. work done outside their own institution, it is desirable for African post-graduate programmes in agricultural economics to develop their own personalities which reflect the national and regional agricultural development priorities.

In conclusion, information on costs and time required for alternative M.Sc. and Ph.D. programmes have been presented together with some observations on differences in quality and relevance. It is left to each individual to assign weights to the various elements of the equation which will have an important bearing on determining the preferable alternative(s).

**3. Speaker:** Dr. H. J. NIESEL (DAAD)

Information on costs to donor of post-graduate programmes in ag. economics at the University of Nairobi:

1. Topping up for German Teaching Personnel

2. Scholarships for in-country training (Sur-Place):
   Generally, the costs are fixed by the university.

   In Nairobi, the first 12 months will cost 40.000.-- KShs, equivalent to US-Dollars 4.850.--.

   The second year will cost 36,000.-- KShs, = US$ 4,365.--.

   From this amount, 12 x 2500.-- KShs (= US$ 3.640.--) correspond to the proper stipend; the rest is assigned to fees etc., explained in detail by Mr. Ngombo's paper.

   A comparison of a M.Sc.-scholarship in Nairobi with a similar scholarship tenable in Germany shows that the scholarship in Germany is by 30 % cheaper per year, due to the fact that we do not have any fees in Germany.

   The proper stipend per month for a diploma candidate in Germany (equivalent to a M.Sc. student) is much lower. Only for a Ph.D. candidate, the same amount is paid.

## General Discussion

During the general discussion period that followed the presentation of the papers, the following points and issues emerged:

(a) the overhead costs incurred by the institutions in which post-graduate work was being carried out were not included in the cost calculations presented in the two papers,

(b) the costs associated with training post-graduate students abroad are so high that a better alternative may be to invest funds in improving or developing local institutions,

(c) because of the significant cost differentials involved, preference must be given to training M.Sc. students locally,

(d) there are not enough institutions in Africa to take care of the needs for post-graduate training by African countries,

(e) there could be plenty of room for training post-graduate students locally if possibilities for exchange programmes were fully exploited,

(f) one way of encouraging post-graduate training locally is for several countries to combine forces and pool resources,

(g) students who study abroad often decide not to return to their home countries. Political considerations are often important factors in this decision,

(h) there seems to be very little or no coordination between (a) donors and (b) donors and recipients. Coordination is also needed at the Heads of Department level to take care of issues of mutual interest,

(i) in financing teaching programmes, the financing for students should get more attention. It often happens that a student applies without knowing who is going to finance him,

(j) the question has been raised of wether funds should be administered by the Universities themselves or by the donor agencies. Donor agencies stimulate the trend towards University-administered funds. This is cheaper for them. However, problems arise as to the allocation within the faculty. No serious complaints have been heard as for the payment of stipends,

(k) there is a need for flexibility in financing regulations,

(l) at the University of Nairobi, Kenyan Ministries pay their employees up to 80% of their salaries for post-graduate training. This leads to a very complicated situation,

(m) procedures for research grants should also be simplified. Requests go a long way before they come to the sponsoring foundation.

The concensus that appeared to emerge from the discussions is that, as much as possible and feasible, attempts should be made to have M.Sc. training carried out locally.

It appeared as if most participants in the discussions still saw a need to have Ph. D. programmes carried out abroad.

The background materials for the workshops "Course development and implementation in specific post-graduate programmes in agricultural economics" on August 2nd and August 3rd are appended (po. 135-153).

The results of the final plenary session on August 4th are summarised in Chapter II (pp. III - IX).

# VIII. PROGRAMME

## VI.I. PROGRAMME

**Wed. July 21, 1976** Arrival of participants

**Thu. July 22**
9.30 - 10.45

**Opening Session**

Chairman: Prof. H.U. Thimm,
University of Giessen

**Welcome addresses by**

H.E. Dr. Heimsoeth
Embassador of the Federal Republic of Germany
Nairobi

Prof. R.S. Musangi
Dean, Faculty of Agriculture
Nairobi

Prof. R.B. Contant
Secretary and Treasurer
Association of Faculties of Agriculture in Africa (AFAA)
Nairobi

Prof. Th. Dams
Vice-President
International Association of Agricultural Economists (IAAE)
Freiburg

Mr. M.K. Gatere
Secretary
Eastern Africa Agricultural Economics Society (EAAES)
Nairobi

Mr. H. Glimm
Head, Higher Education Section
German Foundation for Internation Development
Bonn

**Opening Speech by**

Hon. Maina Wanjigi, M.P.
Assistant Minister,
Water Development
Chairman, Kenya Organizing Committee, IAAE
Nairobi

11.15 - 12.15 Introduction of the seminar programme

14.30 - 18.00 Plenary Session:

Case Studies from Departments of Agricultural Economics

Chairman: Mr. M. Okai

Speakers: Dr. G.O.I. Abalu, Zaria (CS 6)
Dr. L.O. Obibuaku, Nsukka (CS 19)
Dr. B.B. Quraishy, Lusaka (CS 7)

Dr. Dadson, Accra (CS 5)
Prof. A. Weber, Nairobi (CS 2 & 9)
Dr. I. May-Parker, Freetown (CS 18)
Dr. C. Bartlett, Morogoro (CS 10)
Dr. K. Osafo-Gyimah, Cape Coast (CS 15)
Mr. J.A. Berthelot, Lome (CS 11)
Mr. E.F. Tollens, Yangambi (CS 4)
Prof. A.M. El Hadari, Khartoum (CS 1)
Prof. R.O. Adegboye, Ife (CS 16)
Prof. D.A.G. Green, Lilongwe (CS 3)

18.30 - 19.00 Steering Committee

Fri. July 23 Plenary Session:

9.00 - 12.30 Professional needs and man-power requirements for agricultural economists - views from employers.

Chairman: Prof. E.T. Gibbons

Rapporteur: Dr. E.A. Ngwashi

Speakers:
Mr. Kimani, Ministry of Agriculture, Nairobi
Mr. A. Muwonge, E.A. Community
Prof. Q.B.O. Anthonio, ECA/FAO, Addis Ababa
Mr. W. Nguyo, Egerton College, Njoro
Mr. Bunyasi, Agric. Finance Corporation, Nairobi
Mr. Wumbugu, K.M.C., Nairobi
Mr. J. Otieno, Ministry of Finance and Planning, Nairobi
Dr. P. Hopcraft, Institute for Development Studies, Nairobi

General debate

14.15 - 17.45 Plenary Session:

Objectives for postgraduate training in agricultural economics

Chairman: Dr. I. May-Parker

Rapporteur: Prof. D.A.G. Green

Panel discussion: Dr. G.O.I. Abalu,
Mr. E. Andah,
Prof. L.F. Miller

| | |
|---|---|
| | General debate |
| 18.00 - 18.30 | Steering Committee |
| Sat. July 24 | Plenary Session: |
| 9.15 - 12.15 | Financial and organisational/administrative aspects of postgraduate training in agric. economics |
| | Chairman: Mr. K. Gatere |
| | Rapporteur: Dr. G.O.I. Abalu |
| | Speakers: Prof. A. Weber, Nairobi (WP 11)<br>Dr. E. Gilbert, Ford Foundation, Lagos (WP 18) |
| | General debate |
| 12.15 - 13.30 | Review of the seminar programme |
| Sun. July 25 | IAAE XVI International Conference of Agricultural Economists: registration |
| Mon. July 26 | IAAE Conference |
| 10.00 | Inauguration |
| 11.30 | Theodore W. Schultz:<br>On Economics, Farm People and the Political Economy |
| 15.00 | First Plenary Session |
| 19.00 | Official Reception at Parliament Buildings |
| Tue. July 27 | IAAE Conference |
| 9.00 | Second Plenary Session |
| 11.30 | Address by Hon. D.T. Arap Moi, M.P.,<br>Vice-President of the Republic of Kenya |
| 15.00 | Symposium on Kenya's Agriculture |
| 18.15 | Meeting with leaders of Discussion Groups |
| Wed. July 28 | Plenary Session: |
| 9.00 - 11.30 | Teaching aspects of postgraduate training - Teaching load and teaching efficiency |
| | Chairman: Dr. A.M. El Hadari |
| | Rapporteur: Dr. G.O.I. Abalu |
| | Speakers: Dr. El Hadari, Khartoum (WP 8)<br>Mr. E.F. Tollens, Yangambi (WP 5) |
| | General debate |

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| 12.00 - 13.00 | IAAE Conference<br>Discussion Group 14:<br>Curriculum trends for post-graduates |
| 14.15 - 17.30 | Plenary Session:<br>Teaching aspects of postgraduate training - course objectives and course contents<br>Chairman: Mr. E. Andah<br>Rapporteur: Dr. G. Bartlett/Prof. L. Joy<br>Speakers: Prof. A. Weber, Nairobi (CS 9)<br>Prof. Q.B.O. Anthonio, also for Ibadan (WP 2)<br>Prof. D.A.G. Green/Prof. L. Joy<br>(Guide to objectives/draft)<br>General debate |
| 18.30 - 20.00 | Reception: By H.E. Dr. Heimsoeth,<br>Embassador of the Federal Republic of Germany |
| Thu. July 29<br>9.00 - 10.30 | Special Group Session:<br>Objectives of post-graduate training in agricultural economics |
| 9.00 | IAAE Conference:<br>Third Plenary Session<br>Special Groups I - III |
| 14.30 - 17.30 | Plenary Session:<br>Administrative aspects of post-graduate training - Administrative set-up, application and registration procedures, examination, scholarships<br>Chairperson: Mrs. R.W. Waruhiu<br>Rapporteur: Prof. B. Temple<br>Speaker: Mr. G. S. Ngombo (WP 15) |
| 15.00 | IAAE Conference:<br>Discussion Group 14:<br>Curriculum trends for postgraduates |
| Fri. July 30<br>9.15 - 13.00 | Plenary Session:<br>Aspects of sponsoring postgraduate programmes: Priorities, policies, instruments, expectation, constraints<br>Chairman: Dr. Degarus<br>Rapporteur: Dr. J. Anim-Appiah |

Speakers: Mr. E. Deganus, AAU, Accra (WP 19)
Prof. R. Contant, AFAA, Nairobi (WP 20)
Dr. D. Court, Rockefeller Foundation, Nairobi (WP 6)
Dr. E. Gilbert, Ford Foundation, Lagos (WP 17)
Dr. H. Albrecht, GTZ, Eschborn (WP 16)
Dr. H. J. Niesel, DAAD, Nairobi (WP 9)
Dr. K.S. Thio, NUFFIC, Wageningen (WP 12)
Prof. L. Joy, IUC, London (WP 4)

General debate

14.30 - 16.00 Plenary Session:
Objectives for postgraduate training in agricultural economics - reviewed
Chairman: Prof. R.O. Adegboye
Rapporteur: Mr. F.M.A. Ijoyi Fendru

Speakers: Prof. D.A.G. Green/Prof. L. Joy (Guide to the development of objectives for postgraduate training in agricultural economics in Africa)

16.15 - 17.30 Plenary Session:
Research aspects of postgraduate programmes: Priorities, interests, constraints
Chairman: Prof. R. O. Adegboye
Rapporteur: Mr. I. Fendru

Speakers: Dr. J. Dadson, Accra (WP 7)
Prof. D.A.G. Green, Lilongwe (CS 3a)
Prof. Q.B.O. Anthonio (CS 8)
Prof. H.U. Thimm (for Nairobi) (CS 9)

General debate

18.00 - 19.00 Steering Committee

Sat. July 31
9.15 - 13.00 Plenary Session:
Guidelines for postgraduate programmes in agricultural economics - Objectives, aspects of teaching, research, administration, finance and sponsoring
Chairman: Mr. W. Nguyo
Rapporteur: Dr. K. Thio

General debate

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| Sun. Aug. 1 | IAAE Conference: |
| | Excursions |
| Mon. Aug. 2 | IAAE Conference |
| 9.00 | Sixth Plenary Session |
| 11.30 | Special Groups |
| 14.30 - 18.15 | Workshop: |
| | Course development and implementation in specific postgraduate programmes in agricultural economics |
| | Chairman: Prof. H.U. Thimm |
| | Rapporteur: Mr. Machooka |
| | 1. Agricultural Administration (Legon)<br>Introduction by Dr. Dadson (CS 5) |
| | 2. Farm Management (Morogoro)<br>Introduction by Prof. Odero-Ogwel (CS 10) |
| Tue. Aug. 3 | IAAE Conference: |
| 9.00 | Seventh Plenary Session |
| 11.30 | Spontaneous Discussion Groups |
| 14.30 - 18.15 | Workshop: |
| | Course development and implementation in specific postgraduate programmes in agricultural economics (cont'c |
| | Chairman: Dr. Ngwashi |
| | Rapporteur: Mr. Machooka |
| | 3. Agricultural Marketing (Nairobi) (C S 9)<br>Introduction by Dr. G. Lorenzl |
| | 4. Agricultural economics/general (Ibadan)(C S 8)<br>Introduction by Prof. Q.B.O. Anthonio |
| Wed. Aug. 4 | |
| 8.00 - 9.00 | Drafting Committee |
| | IAAE Conference |
| 9.00 | Closing Session |
| 15.30 - 18.00 | Final Plenary Session: |
| | Conclusions, recommendations, general findings and remarks |
| | Chairman: Mr. H. Glimm |
| | Rapporteur: Mr. Machooka |
| 18.00 - 19.30 | Farewell Cocktail |
| | IAAE Conference |
| 20.00 | Banquet in the Plenary Hall, Kenyatta Conf. Centre |
| Thu. Aug. 5 | Departure of participants |

# IX. LIST OF PARTICIPANTS

## IX. LIST OF PARTICIPANTS

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# X. LIST OF CASE STUDIES AND WORKING PAPERS

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## X. List of Case Studies and Working Papers [1]

### 1. List of Case Studies:

| | | |
|---|---|---|
| CS 1 | A.M. El Hadari | Department of Rural Economy, University of Khartoum |
| CS 2 | Adolf Weber | Department of Agricultural Economics, University of Nairobi |
| CS 3 | D.A.G. Green | Department of Rural Economy, Bunda College of Agriculture, University of Malawi |
| CS 3a | D.A.G. Green | Toward a Strategy for Post-graduate Research in Agricultural Economics at Bunda College of Agriculture |
| CS 4 | Eric F. Tollens | Department of Agricultural Economics, National University of Zaire |
| CS 5 | J.A.Dadson | Post-graduate Training in Agricultural Economics at the University of Ghana |
| CS 6 | G.O.I. Abalu | Department of Agricultural Economics and Rural Sociology, University of Nigeria |
| CS 7 | E.A. Ngwashi | Department of Rural Economy and Extension Education, University of Zambia |
| CS 8 | S.O. Olayide &<br>L.F. Miller | Department of Agricultural Economics University of Ibadan |
| CS 9 | A. Weber | Department of Agricultural Economics University of Nairobi |
| CS 10 | L.A. Odero-Ogwel | Department of Rural Economy and Extension University of Dar es Salaam |
| CS 11 | J.A. Berthelot | The Superior Institute of Rural Development Project in Togo |
| CS 12 | B. Temple | College of Agriculture and Forestry University of Liberia |
| CS 13 | M. Elshahat | Department of Agricultural Economics El-Minya - Assuit University, Egypt |
| CS 14 | I. Anim-Appiah | Department of Agricultural Economics University of Science & Technology, Ghana |
| CS 15 | K. Osafo-Gyimah | University of Cape Coast, Ghana |
| CS 16 | R.O. Adegboye | Department of Agricultural Economics University of Ife, Nigeria |
| CS 17 | M.S. El Adeemy | Department of Agricultural Economics Faculty of Agriculture Ain Shams University, Egypt |
| CS 18 | I.I. May-Parker | Department of Agricultural Economics University of Sierra Leone |
| CS 19 | L. Obibuaku | Department of Agricultural Economics/Extension University of Nigeria, Nsukka |

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[1] All case studies and working papers may be obtained from the
German Foundation for International Development (DSE)
Higher Education Section
Simrockstrasse 1
D 5300 Bonn 1 / F.R.Germany

## 2. List of Working Papers:

| | | |
|---|---|---|
| WP 1 | DSE | Main problems in administering post-graduate programmes in agricultural economics<br>Comments copied from questionnaire No. 1 (as at 15 May, 1976) |
| WP 2 | Q.B.O. Anthonio | Post-graduate Training in Agricultural Economics |
| WP 3 | S. La-Anyane | Role of the AAASA in post-graduate training in African Institutions with special reference to Agricultural Economics |
| WP 4 | I.C.M. Maxwell | The Inter-University Council for Higher Education Overseas |
| WP 5 | Eric F. Tollens | Major Teaching Aspects in Training in Agricultural Economics at the National University of Zaire |
| WP 6 | L.F. Miller & David Court | The Rockefeller Foundation Programme in Agricultural Economics in Africa |
| WP 7 | J.A. Dadson | Research Aspects of Post-graduate Training Programmes - Note from Ghana |
| WP 8 | A.M. El Hadari | Some Ideas and Suggestions on Major Training Aspects |
| WP 9 | H.J. Niesel | The role of DAAD in sponsoring post-graduate programmes in Africa |
| WP 10 | H.G. Njome | Private Sector needs for Agricultural Economists - Co-operative Company case |
| WP 11 | A. Weber | Post-graduate Programmes, Staff Development and Training Costs -Some Remarks and Observations-. |
| WP 12 | A.J. van Dulst | NUFFIC |
| WP 13 | A. Muwonge | Professional Performance, Optimal Training and Recruitments for Agricultural Economists in the East African Community |
| WP 14 | G. Lorenzl | Summary of Reports on Post-graduate Training in Agricultural Economics in Africa |
| WP 15 | G.S. Ngombo | Administrative Aspects of Post-graduate Programmes |
| WP 16 | H. Albrecht | The Role of GTZ in Sponsoring Higher Agricultural Education in Africa |
| WP 17 | E.H. Gilbert | A Summary of Ford Foundation Activities with Special Reference to the West and Central African Region |

| | | |
|---|---|---|
| WP 18 | E.H. Gilbert | Financial Aspects of Post-graduate Training in Agricultural Economics in Africa and Overseas |
| WP 19 | E. Deganus | A Contribution from the Association of African Universities |
| WP 20 | R.B. Contant | The Association of Faculties of Agriculture in Africa and its role in the organisation of post-graduate programmes |
| WP 21 | D.A.G. Green/<br>H. Glimm | Concluding Review: Main Issues and Recommendations |
| | D.A.G. Green | Review of Recommendations (5th August 1976) distributed to participants after closure of the seminar for comments. |

# XI. APPENDIX

M.Sc. Programmes in agricultural economics with course work and thesis

## XI. Appendix:

### M.Sc. programmes in agricultural economics with coursework and thesis

### 1. Post-graduate programme at the University of Ibadan (Nigeria) (see also C 5 8)

Post-graduate training at Ibadan in M.Sc. Agricultural Economics leans heavily towards quantitative methods and problem analysis. The structure of the graduate programme is:

A. Core Theory Courses
B. Core Quantitative Courses
C. Special Field Courses in Agric. Economics
D. Other Specialised Electives.

The M.Sc. course is divided into two sections. The taught course for one year based on the courses selected as indicated above. After a satisfactory course work the student may then register for thesis on a selected field with the advice of the Department of Agricultural Economics. A student will not be allowed to register for the thesis preparation if he/she fails any of the exams. Resitting the examination may help the student to perform better and register for the thesis work. Normally when the student registers for the M.Sc. programme he/she is given and advisor or supervisor who will guide the student on the work both in teaching and in thesis work.

The M.Sc. course is supposed to prepare the graduate to answer both agricultural and rural problems more analytically using data. With the courses given the logical thinking is enhanced.

### Structure of the Graduate Programme

As indicated earlier, we started with an all research programme and later changed to a course work plus research programme. The first elaborate programme worked out under the administration of Prof. L.F. Miller in 1970/71 is divided into three groups. The first group comprises seven compulsory core courses with a total of twenty-one units. The second group comprises six "special field" courses from which a candidate will select any one plus advanced agricultural policy and development (AGE 507). The third group comprises approved elective courses either in technical agriculture or mathematical statistics with a minimum of five units. In all a total of 32 units will have to be successfully completed by the end of the first year. This structure is presented in table below.

Table : The 1970/71 Graduate Programme

| COURSES | UNITS |
|---|---|
| (a) Compulsory Core Courses | 2.5 |
| EC 411 Theory of value | 2.5 |
| EC 412 Theory of production | 2.5 |
| EC 414 Theory of Economic Policy | 2.5 |
| EC 424 Theory of Statistics | 3.0 |
| AGE 504 Quantitative analysis & Econometrics | 3.0 |
| EC 422 Data Processing | 2.0 |
| AGE 505 Research Methodology | 3.0 |
| (b) Two Required Special Field Courses | |
| AGE 507 Adv.Agric. Policy & Development | 3.0 |
| AGE 508 Adv.Farm Management & Production Economics | 3.0 |
| AGE 509 Adv.Agric. Resource Economics | 3.0 |
| AGE 510 Adv.Agric. Marketing | 3.0 |
| AGE 511 Adv.Agric. Extension | 3.0 |
| AGE 512 Adv.Rural Sociology | 3.0 |
| (c) Approved Electives (Not more than 5.0 units) | |
| Technical Agric. Courses | 5.0 |
| Mathematics Courses | 5.0 |
| TOTAL | 32.0 |

The EC courses offered by the Department of Economics were replaced beginning with the 1974/75 session by the following agricultural economics courses:

| | | |
|---|---|---|
| AGE 501A | Microstatic and microdynamic Theory | 3 units |
| AGE 501B | Macrostatic and macrodynamic Theory | 3 units |
| AGE 501C | General Equilibrium theory | 3 units |
| AGE 502 | Statistical theory and analysis | 3 units |
| AGE 503 | Adv. Field Exptn. and Biometrics | 3 units |

To provide a terminal rendering of the courses as well as make provisions for more courses under a refurnished doctoral programme, a revised programme put forward was approved for the 1976/77 session. The courses involved are as follows:

A. Core Theory Courses

| | | |
|---|---|---|
| AGE 501 | Advanced Microeconomic theory | 3 units |
| AGE 502 | Advanced Macroeconomic theory | 3 units |
| AGE 503 | General Equilibrium theory | 3 units |

B. Core Quantitative Courses

| | | |
|---|---|---|
| AGE 504 | Statistical theory and analysis | 3 units |
| AGE 505 | Adv. Field Experimentation | 3 units |
| AGE 506 | Adv. Biometrics | 3 units |
| AGE 507 | Quantitative Methods | 3 units |
| AGE 508 | Econometric theory | 3 units |
| AGE 509 | Research Methodology | 3 units |

C. Special Field Courses In Agric. Economics

| | | |
|---|---|---|
| AGE 510 | Adv. Agric. Development & Policy | 3 units |
| AGE 511 | Farm Decision Theory | 3 units |
| AGE 512 | Adv. Production Economics | 3 units |
| AGE 513 | Adv. Agric. Resource Economics | 3 units |
| AGE 514 | Adv. Agric. Marketing | 3 units |
| AGE 515 | Adv. Agribusiness Management | 3 units |
| AGE 516 | Agricultural Administration | 3 units |
| AGE 517 | Adv. Quantitative Methods | 3 units |
| AGE 518 | Adv. Econometrics | 3 units |

### D. Other Specialised Electives

| | | |
|---|---|---|
| AGE 519 | Financial Management | 3 units |
| AGE 520 | Project Analysis and Planning | 3 units |
| AGE 521 | Marketing Management | 3 units |
| AGE 522 | Readings in Agric. Economics | 3 units |
| AGE 523 | Applied Forecasting | 4 units |
| AGE 524 | Applied Mathematical Programming | 4 units |

For the M.Sc. degree candidates, 9 units of series A, 12 units of series B (AGE 504, 507, 508 and 509), 9 units of series C (AGE 510 and any other two special fields) and 6 units of either any two courses in series D or courses in technical agriculture will be required. This provides a total of 36 units of course work. In the case of Ph.D. candidates, additional requirements include 6 units of series B (AGE 505 and 506), 6 units of two other fields in series C not previously selected, and 6 units of either two courses in series D or in technical agriculture. The total number of units required for Ph.D. degree is 54.

## 2. Post-graduate Programme at the University of Legon (Ghana)(see also CS5)

The major highlights of the paper (CS 5) which were stressed in the presentation were the following:

1. The programme has been designed at the request of the government.
2. The object of the programme is to provide high-level manpower for the management and administration of public programmes in rural and agricultural development, a middle and lower level training being organized by other institutions.
3. The programme was drawn up by a team comprising representatives of the Government (ie. Ministry of Agriculture), the USAID (the external agency providing assistance for the programme), the Ghana Institute of Management and Public Administration (GIMPA - which now handles the middle-level training programme), and the University of Ghana (the Faculty of Agriculture, the School of Administration, and the Faculty of Law). The team

also benefitted from the experience of Ministry of Agriculture staff who had been trained in similar programmes overseas.

4. The programme has a one-year Graduate Diploma option and a two-year Masters Degree option to suit the needs of participants and sponsors.

5. Some of the problems experienced or envisaged are:
   - the programme is multi- and interdisciplinary, involving more than one Department. There will be a need for coordination and direction,
   - it is new and unfamiliar and will require the preparation of teaching materials and data not yet available,
   - there is need to build up the strenght of staff and facilities to cope with the expected heavy load of instruction, supervision and supporting research.

## THE GRADUATE PROGRAMME IN AGRICULTURAL ADMINISTRATION

The experience of Ghana which, like other developing countries, has embarked on massive agricultural and agro-industrial development programmes, has led to the recognition that one of the major constraints to increasing agricultural output is effective management and administration of public programmes aimed at agricultural and rural development. Typically, management at lower and middle levels (and even at higher levels) has been unable to function efficiently due as much to over-centralization as to under-training and inexperience. The task of managing agricultural development has required more knowledge, skills and techniques of managers than actual managers have been exposed to in traditional university courses or in public administration.

Thus far, the Government and other agencies have sought to equip their managers with the necessary skills by sending them overseas for appropriate courses of varying lengths. Such training has proved very useful but also very expensive in terms of foreign exchange and has been unable to meet the growing demand for such personnel. Hence, the establishment of a management training programme in Ghana.

The initial request was made by the Ministry of Agriculture to USAID (Ghana) for assistance in developing a training programme in agricultural management and administration. An agreement to this effect was concluded in 1975 to establish the training programme at all levels of management, as follows:

(1) a short-term in-service training for field staff of the Ministry of Agriculture with a follow-up consultancy as may be required in the various regions. This programme is offered at an Institute of Management established within the Ministry;

(2) a nine-month diploma course in agricultural management at the Ghana Institute of Management and Public Administration for middle-level managers of the Ministry of Agriculture who do not hold university degrees; and

(3) a graduate programme in agricultural administration leading to a Graduate Diploma in Agricultural Administration (GDAA; 1 year) or a Master of Agricultural Administration (MAA; 2 years).

## OBJECTIVES

The broad objectives of the programme are:

i. to increase the capability of officers to plan, implement and administer broad-based agricultural and agro-industrial programmes and projects;

ii. to improve officers' skills in project development and evaluation;

iii. to provide improved analytical and decision-making competence and training experience related to the task of improving agriculture, through the integration of theory and concepts with practical needs.

## COURSE STRUCTURE

Students with a good first degree in agricultural economics, economics, agriculture or other approved subject may be admitted to the two-year MAA course. The one-year graduate diploma course is open to students with a pass at the first degree, or with background in an unrelated area. Students who otherwise qualify for direct entry to the MAA whose sponsors are unable to release them for as long as 2 years for the MAA may also enroll for the GDAA.

Students will follow a prescribed set of courses in the first year covering economics, administration, development economics, rural sociology, quantitative methods, and law. Four courses, which form part of the Master in Business Administration (MBA) course, will be offered in the School of Administration. Three new courses have been specifically prepared in the Department of Agricultural Economics, viz. (a) agricultural administration, (b) development economics, and (c) rural sociology and extension. The GDAA course is the same as the first year of the MAA.

In the second year of the MAA students may undertake intensive study of two areas and present long essays on research projects undertaken in the long vacation after the Part I. The special areas of study may be selected from the following:-

1. agricultural development programming;
2. agricultural institutions;
3. marketing;
4. agricultural finance & taxation;
5. agricultural statistics;
6. farm management.

## FACILITIES

The USAID has provided one staff member in agricultural economics, and will provide salary support for [illegible] years for 3 additional (Ghanaian) faculty members - 2 in the Department of Agric. Economics and 1 in the School of Administration. It has also provided funds for library and teaching materials on economic development and agricultural administration; and it will support field studies undertaken to augment instruction.

Twenty-nine applications including one from Liberia, have been received for the start of the programme. All of them qualify; three-fourths of them have several years of experience in the field, while one-fourth are recent graduates. However, it is expected that only 12-15 will be admitted for October, 1976.

## PROBLEMS

Beginning a new graduate programme is a major task and the present staff is very small. Counting the USAID lecturer, there are only four agricultural economists in the department, one of whom is on leave. Despite widespread recruitment efforts it has not been possible to locate and hire another faculty member. The situation is not quite so grim, however; Faculty on research appointments in the Institute for Social, Statistical, and Economic Research may be called upon for teaching assistance in either the undergraduate or graduation programmes. The Economics Department and School of Administration will also assist in the MAA teaching and qualified personnel outside the University may assist on a parttime basis. There are also several Ghanaians presently doing graduate work abroad who will be returning within a year or two to the university. It must be recognized, however, that the teaching, advising, and supervising research for 12-15 graduate students is far more demanding than anything the department has done before. If students do not receive adequate faculty attention the objectives of the programme may not be achieved.

The Ministry of Agriculture originally requested the management training effort and commited itself to providing 10 to 15 students per year to the MAA. A new Commissioner of Agriculture and new personnel in the top levels, however, have not given the support that was expected. Moreover, the organizational structure of the Ministry has become more rather than less centralized. The Ministry of Agriculture is in the fore-front of agriculture development and improved management at all levels is possible. Some of the reluctance by the Ministry seems to stem from the fear that if their staff significantly improve their skills they will leave for other jobs at higher pay. Alternatively, the Ministry finds it difficult to release high level staff for more than one year due to present agricultural development programmes. This may, in fact, be an indication that short-term non degree courses of the EDI type for high-level manpower may be necessary. And we are considering this.

## THE FUTURE

The favourable response in applications and verbal comments among agriculturally related organizations suggest that MAA graduates will find ready employment. Several organizations have indicated an intention to support students next year but were unable to do so in this first year. The need for training in agricultural administration is widely accepted.

Case studies and research reports completed as part of the academic requirements can form the basis for actual agricultural development projects. To the extent that students put to use the skills they learn, the graduate programme will sustain itself by the example of its graduates. The first year or two will undoubtedly reveal additional problems, and modifications will be made as they become necessary.

## Graduate Training in Agricultural Administration (GDAA & MAA) : Teaching Distribution

| Course | Term | | | Department |
|---|---|---|---|---|
| | 1 | 2 | 3 | |
| Agric. Administration | x | x | x | Agric. Econ. |
| Development Econ.etc. | x | x | x | Agric. Econ/Econ. |
| Rural Soc. & Ext. | | | x | Agric. Econ.(Ext./Sociology) |
| Managerial Econ. | x | x | | Sch. of Admin. |
| Administrative Science | x | | | Sch. of Admin. |
| Fundamentals of Accounting (& Mgt.) | x | x | | Sch. of Admin. |
| Ag. Law | | x | | Faculty of Law |

Electives (Part II of MAA)

| | |
|---|---|
| Agricultural Development Programming | Agric. Econ. |
| Farm Management | Agric. Econ. |
| Agricultural Institutions | Agric. Econ. |
| Marketing | Agric. Econ/Econ. |
| Agricultural Finance & Taxation | Agric. Econ/Econ. |
| Agricultural Statistics | Agric. Econ/Econ. |

### PRACTICALS:

Computer Science
Project Studies
Vacation Research

### 3. Post-graduate programme at the University of Nairobi (Kenya) (see also C S 9)

The Department of Agricultural Economics of the University of Nairobi administers two types of post-graduate programmes:

a) M.Sc. Degree in Agricultural Marketing by thesis only
b) M.Sc. Degree by taught courses and thesis.

Of the latter, one M.Sc. course in Agricultural Extension was started in 1973 and two in Agricultural Marketing in 1974 and 1975 respectively.

The M.Sc. degree by thesis only is given as long as proper supervision is provided and evidence available that the candidate is able to produce a high quality thesis, without a large amount of course work. A number of students have already graduated under the scheme even though some of them have normally been asked to do a few relevant courses on the university campus.

The M.Sc. degree by course work and thesis requires that students pass examination on topics selected from the list of courses.

The comprehensive examination in M.Sc. agricultural marketing consists of the following papers:

1. Quantitative methods comprising of
    - mathematics
    - statistics and
    - econometrics
2. Market analysis comprising of
    - interregional trade
    - market and price analysis and
    - international agricultural trade
3. Marketing management and market research which include courses in
    - economic theory
    - marketing management and
    - market research

4. Market policy and planning comprising of the following courses

   - market policy and improvement planning
   - agricultural policy analysis
   - agricultural market development
   - crop production and
   - animal production

   (Agricultural policy analysis and agricultural market development are optional, students have to opt for one and take instead either crop or animal production).

Comprehensive examination contributes 60 % to the final overall mark of part I of the University examination, 40 % is made up of coursework assessment conducted by the Faculty.

Candidates are required to pass each examination and the passmark is 50 % of the combined coursework and written paper marks. If a candidate fails to reach the pass mark in not more than two papers, he may, at the recommendation of the Board of Examiners and with the approval of the Senate, be permitted to resit the papers in which he has failed. A candidate who fails in more than two papers shall be discontinued. A candidate who fails to reach the pass mark in the paper or papers he has been allowed to resit shall also be discontinued.

Part II University examination shall consist of the assessment of the thesis based on the project undertaken in the second year of study, which shall be submitted within the time specified in the common regulations for the M.Sc. degree in all Faculties. The thesis includes students research work done by the student himself. Normally the student must finish the thesis within one year. The Board of Examiners for the Part II University Examination based on thesis work is consist of not less than three examiners with at least one of them as an external examiner to the University.

The course is geared to prepare graduatesin Agricultural Marketing for a career in agri-business. Due to shortage of staff some of the courses may not be given. But with the support of other departments or the Faculty of Commerce, the course seems adequate for marketing specialization. However, due to needs expressed by the Kenyan Government, a general course in Agricultural Economics will receive special emphasis.

The second M.Sc. course in Agricultural Marketing started in January, 1976 when 10 students were registered. The syllabus which applies to this course is given in the table below.

### Syllabus for the taught M.Sc. Agricultural Marketing programme

| Part | Subject | Contact hours |
|---|---|---|
| 1 | 1. Review of Economic Theory | 40 |
| | 2. Mathematics | 30 |
| | 3. Statistics | 30 |
| 2 | 4. Econometrics (including computer use) | 40 |
| | 5. Interregional Trade | 30 |
| | 6. Marketing Management (including legal aspects) | 50 |
| 3 | 7. Market and Price Analysis | 40 |
| | 8. Agricultural Policy Analysis[a] | 30 |
| | 9. Agric. Market Development[a] | 30 |
| | 10. International Agricultural Trade | 30 |
| | 11. Crop Production[a] | 30 |
| | 12. Animal Production[a] | 30 |
| 4 | 13. Market Policy and Improvement Planning | 40 |
| | 14. Market Research | 40 |
| | Total | 430 |

[a] Optional courses. Students may opt for course 8 or 9 plus either course 11 or 12.

### Subject Description M.Sc. Courses in Agricultural Marketing

Course 1: Review of Economics

Elementary theory of demand, supply and price. Elasticities. Intermediate and dynamic theories of demand, supply and costs. Market behaviour of households and firms. Theory of perfect competition, monopoly, and imperfect competition. Theory of distribution, factor prices. Economic efficiency. Micro-economic policy.

### Course 2: Mathematics

Review of elementary algebra and calculus. Calculus and the theory of the firm, logarithmic and exponential functions. Permutations and combinations. Matrices. Determinants and linear equations. Difference equations.

### Course 3: Statistics

Probability, random variables and their distribution. Sampling and estimation. Hypothesis. Analysis of variance. Regression, correlation. Bayesian decision theory. Non-parametric statistics, tests. Time series analysis. Index numbers. Game theory.

### Course 4: Econometrics

Regression theory. Multiple regression. Serial correlation. Simultaneous equations. Regressor and error. Estimating techniques. Decision theory. Distribution theory. Application of computer facilities.

### Course 5: Interregional Trade

Price equilibrium in spatially separated markets. Space and transfer costs. Markets with spatially dispersed production. Price equilibrium with alternative product forms. Temporal market price relationships. Short and long run regional specialization. Land use equilibrium models. Multiple-region production and trade models.

### Course 6: Marketing Management

Concept of marketing. Marketing systems. Nature and structure of the market. The product. Distribution. Promotion. Pricing. Marketing organisation. Controlling the marketing effort. Social issues in marketing. Metamarketing. Legal aspects of marketing.

### Course 7: Market and Price Analysis

Concepts of efficiency. Market efficiency criteria. The structure-conduct-performance approach. The systems approach. Problem identification strategies. Methods of performance assessment. Case studies. Price variation through time. Market margins. Pricing institutions. Empirical price analysis.

### Course 8: Agricultural Policy Analysis

Role of agriculture in different economic systems. Growth paths of agricultural development. Macroeconomic models for developing economies. Sectoral terms of trade. Policy instruments for the agricultural sector. Agricultural pricing and income policies. Financing rural development. Factor input policies. Public institutions and private enterprises. Structure of decision-making.

### Course 9: Agricultural Market Development

Structural changes of developing economies. Theories of economic development. Patterns of development of the service sector. Developmental changes in the market system. Structural changes in demand for agricultural factors and products. Market development concepts and systems improvement planning. Market development projects.

### Course 10: International Agricultural Trade

History of agricultural trade. International trade theories. Primary producer problems. International commodity agreements. World markets for selected agricultural commodities. Models of commodity markets. International trade corporations. Organisation of Export business. East African Community trade versus other trading areas.

### Course 11: Market Policy and Improvement Planning

Objectives, institutions and instruments of market policy and planning. The role of parastatal bodies. The grain market in Kenya. Market improvement planning techniques. Framework for planning a wholesale market. Cost-benefit analysis. Feasibility studies. Planning exercise.

### Course 12: Market Research

Logic of scientific discovery. Market research strategies. The role of hypothesis testing. Interview techniques. Design of questionnaires. Structure of research proposals. Planning of fieldwork. Organisation of data analysis. - Structure of research reports. Exercises.

### Course 13: Crop Production

Production according to market demand dynamics. Breeding and husbandry methods for product quality improvement. Quality standards. Conditions for transportation and storage. Crop and produce protection.

### Course 14: Animal Production

Quality production according to market demand dynamics. Determinants of quality of animal products. Quality improvement possibilities. Conditions for transporting livestock.Requirements for processing animal products.Quality conservation.

## 4. Post-graduate programme at the University of Dar Es Salaam (Tanzania) (see also C S 10)

The original plan for Morogoro M.Sc. programme was to produce graduate specialists in production economics and farm management. This was in collaboration with departments of rural economy in Eastern African Universities. With this plan the University of Nairobi was to produce Agricultural Marketing specialists and Makerere University was to specialize in Rural Development and Planning.

Since the Tanzanian Government's manpower requirements are very diverse, the Department of Rural Economy of the University of Dar es Salaam at Morogoro has adopted sufficient flexibility into the original programme to allow students to specialize in any branch of Rural Economy and Agricultural Extension. The present programme, however, has a definite bias towards Production Economics and Farm Management.

A general degree in agriculture is normally the minimum entry requirement to an M.Sc. programme at Morogoro. The undergraduates from the University specialize in their final year and take courses in Farm Management. With such a background (35 lecture hours, 6 pract hours, 9 seminar hours, about economics of livestock enterprises, the economics of annual and perennial crop and fruits and vegetable enterprises) the students should be prepared to start the M.Sc. programme.

Students without this background may be admitted on special conditions if they have long practical experience in the specific areas of their interest. Students with such background may be adviced to take some courses necessary to their work.

## COURSE OUTLINE FOR M.SC.(AGRIC.ECON.) WITH COURSE WORK AND THESIS

The programme is designed to train students for professional positions of teaching and research in Colleges and Universities and for research administration, extension and public relations in public agencies and parastatal and private organisations. The students major in Farm Management and have Marketing, Agricultural Development and Planning, Extension, Rural Economic Development as their minors.

Students are admitted for graduate work in the Department upon meeting the general requirements for admission to the Faculty. The overall programme takes about 2 years to do; one year for course work and one year for research and thesis. The student has to pass both the coursework and the thesis in order to graduate.

Before embarking on thesis research the candidate must complete at least 8 courses and obtain at least a B average in the aggregate. Contact hours for each course is 40 lecture hours equivalent.

Course 1: Maths for Economists

The use of mathematical techniques for solving economic problems in the rural sector. Calculus, introduction to matrix algebra.

Course 2: Marketing

Agricultural price analysis, measurements of efficiency, Co-operative Marketing, East African Marketing Boards and East African Interstate Trade.

Course 3: Economic Development

The development of under-development and the structure of the Tanzania economy. The role of the agricultural sector in the growth process. Agricultural producer co-operatives.

Course 4: Econometrics

Principles of statistical inference, least square estimators, two variables model, three variables model, general linear model, errors in variables, and simulation equation problems. The use of these techniques in the context of Tanzania's rural sector.

Course 5: Economic Planning

Comparative growth strategies, the planning process, planning techniques and models, organization of planning. Special emphasis on agricultural/rural sector planning, regional planning, Ujamaa village planning. Project appraisal and evaluation - within the context of overall rational development plan.

Course 6: Production Economics

Theory of the firm, estimations of agricultural production functions including static, single and multiple production theories aggregate problems in production analysis; national agricultural production and the use of input-output tools or models; actual farm production analysis; case studies.

Course 7: Farm Planning and Management I

Farm Planning and Management:

Principles of organization and management of individual farms: management tasks; theory and application of decision-making in relation to management. Labour management; work simplification. Farm recording accounting, and analysis. Farm planning models or tools; farm credit, three R's of capital; principles and techniques of capital management including capital budgeting and determination of credit requirements and utilization potentials; repayment schedules. Farm Practical problems.

Course 8: International Economic Relations

Unequal exchange. Neo-colonialism and imperialism. Foreign private investment. International tariff, trade and commodity agreements. Terms of trade analysis.

Course 9: Research Methodology

Methods of collecting rural socio-economic data for regular programmes and for special purposes. Data processing, research proposal for a thesis.

### Course 10: Rural Sociology

Individual, group and social classes; rural institutions, Ujama living and working, socio-economic change, factors effecting the rate of change.

### Course 11: Agricultural Extension

Agencies of rural social and economic change, extension methods, extension planning and evaluation, comparative study of extension systems.

### Course 12: Thesis

To be submitted in the candidate's area of specialization.

### Course 13: Farm Planning and Management II

Advanced Farm Planning Techniques:

Linear programming, and other farm analysis and planning techniqu such as systems synthesis and analysis, systems similation including integer, other tools, stochastic, recursive, dynamic and polyperiod variants. Use of cybernetics in farm management.
Case Studies.

## DSE

Founded in 1959, the German Foundation for International Development (DSE) is one of the major agencies of German Development Assistance. Although being a private institution, it is fully financed by the German Federal Government and a few Laender (State) governments. The main objectives of the Foundation's work are:

- to contribute to the improvement of bilateral, regional and international cooperation with Third World countries by convening uni-national and international conferences, expert meetings and seminars,
- to provide further training for high and middle level personnel from Third World countries by short and long term programmes in various fields of specialisation,
- to train German personnel of technical assistance before their employment in projects abroad, by courses of two to three months duration,
- to contribute to decision-making in development policy by providing information and documentation services to the Governments and agencies.

For these purposes, the following divisions have been established:

- Education, Science and Documentation Division, Bonn;
- Seminar Centre for Economic and Social Development, Berlin;
- Area Orientation Centre, Bad Honnef;
- Public Administration Promotion Centre, Berlin;
- Industrial Occupations Promotion Centre, Mannheim;
- Food and Agriculture Development Centre, Feldafing nr. Munich.

The Directorate General and the (internal) Administration Division are seated in Berlin.

Within the first mentioned Division activities in the field of education and science are concentrating on two areas:

- basic education (formal and non-formal) for rural areas, especially in Africa South of the Sahara,
- higher education and research promotion.

In basic education, the German Foundation tries to contribute to improving techniques of educational planning and administration, especially in curriculum development and evaluation. Higher education and research promotion receive special attention in seminars, conferences and workshops focussing on aspects of the institutional infrastructure, curriculum adaptation, and regional and international cooperation.

In contrast to other German agencies and foundations, the DSE does not run "projects" abroad. There is, however, the tendency of establishing long-range cooperation schemes with training institutions in developing countries for a common use of training facilities and with the aim of strengthening such institutions.

In the field of curriculum planning and evaluation, such training programmes are carried out in cooperation with the newly established African Curriculum Organization (ACO). Another programme has been set up for documentation and information training together with the East African Academy.